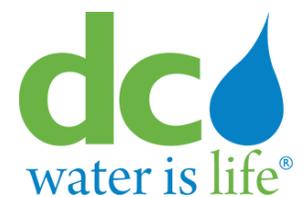


DC Water

Cost of Service Study

Final Report / February 25, 2022



February 25, 2022

Syed Khalil
Director of Rates and Revenue
DC Water
1385 Canal St., SE
Washington, DC 20003

Subject: FY 2023-2024 Cost of Service Study Report

Dear Mr. Khalil,

Raftelis Financial Consultants, Inc. (Raftelis) is pleased to provide this Cost of Service Study (COS Study) Report for DC Water. Over the past several months, we have worked closely with DC Water completing this engagement. We would like to take this opportunity to thank you and your staff for the efforts and participation you put forth during the Study.

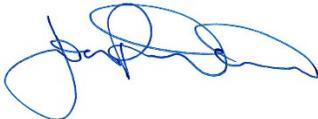
The major tasks of this COS Study included the following:

- Revenue Sufficiency Model (Model) – Raftelis conducted a revenue sufficiency analysis to independently forecast operating and capital costs along with units of service for fiscal year (FY) 2023 and FY 2024; these years served as the test years. We compared our forecasted revenue to the Financial Planning Model developed by DC Water staff to identify any revenue shortfalls for the test years.
- Cost of Service / Rate Equity Analysis – Raftelis reviewed and updated the cost of service allocation factors to ensure that proposed rates are equitable and that no cross subsidies exist between the various water and wastewater customer classes.

The Report summarizes the key findings and recommendations related to the financial plan and the proposed cost of service-based rates for FY 2023-2024.

It has been a pleasure working with you, and we thank you and DC Water staff for the support provided during the course of this study.

Sincerely,



Jon Davis
Executive Vice President

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1. Executive Summary

1.1. Background of the Study

DC Water engaged Raftelis to perform a Cost of Service Study (COS Study). To meet the needs of DC Water’s Task Order objectives, Raftelis prepared the following deliverables:

- Revenue Sufficiency Model (Model) – Raftelis conducted a revenue sufficiency analysis to independently forecast operating and capital costs along with units of service for fiscal year (FY) 2023 and FY 2024; these years served as the test years. We compared our forecasted revenue to the Financial Planning Model developed by DC Water staff to identify any revenue shortfalls for the test years.
- Cost of Service / Rate Equity Analysis – Raftelis reviewed and updated the cost of service allocation factors to ensure that proposed rates are equitable and that no cross subsidies exist between the various water and wastewater customer classes.

A summary of the methodology and findings from the Revenue Sufficiency and COS Study is included in this Executive Summary.

1.2. Revenue Sufficiency Model

There are three important forecasts in the revenue sufficiency analysis: operating expenditures, capital expenditures, and units of service. These three schedules project how much revenue DC Water will generate.

Units of service include number of customer accounts, billed water consumption, and equivalent residential units (ERUs). To forecast units of service in the most accurate manner, Raftelis reviewed billed water, customer accounts, and consumption data from FY 2020 and FY 2021.

Since FY 2014, billable water flows have decreased by an average annual rate of approximately 1.5%. This has occurred even though DC Water’s customer base has increased slightly over the same period. The trend in declining consumption is likely related to a combination of the expanded use of low-flow fixtures and a broader awareness of resource conservation. This trend is consistent with the per capita declines in consumption that Raftelis has seen in other utilities with similar demographics and service area characteristics. The trend of declining consumption accelerated in FY 2020-21 especially for commercial customers, presumably due to the impacts of the COVID-19 pandemic.

Raftelis has assumed that the count of Equivalent Residential Units (ERUs), which are used to calculate revenue from the Clean River’s Impervious Area Charge (CRIAC), are consistent with DC Water’s most recent update to its impervious area database.

Based on projected consumption, accounts, and ERUs in FY 2020-2021, Raftelis’ calculated revenue from operations was consistent with DC Water’s Financial Plan. In the aggregate, the variance in revenue when compared to the Financial Plan for FY 2023-2024 was less than 0.5% for both test years.

Our analysis found that DC Water has consistently been able to control operating expenditures at or below budgeted levels. Therefore, it was determined that budgeted operating expenditures provided a prudently conservative forecast for our sufficiency analysis. Capital expenditures consisted mainly of debt service and coverage requirements.

The revenue sufficiency forecasts for FY 2023 and FY 2024 showed revenue lower than DC Water’s Financial Plan by \$2,633,133 and \$3,517,931, respectively. A discrepancy in user revenue data is expected, as Raftelis calculates revenue using raw consumption data, which usually diverges from the Financial Plan estimate. Furthermore, Raftelis used slightly different calculation methods for estimating future debt issuances in FY 2022, which accounts for the small delta for total debt service in FY 2022. A comparison of total revenues and expenses is provided in Table E- 1.

Table E- 1: Comparison of Projected Revenue and Expenses

	DC Water Financial Plan (2023)	Raftelis Model (2023)	Delta
Revenue			
Operating	\$752,744,272	\$750,111,139	\$(2,633,133)
Non-Operating	\$47,248,509	\$47,248,509	\$ -
Total: Revenue	\$799,992,781	\$797,359,648	\$(2,633,133)
Expenses			
Operating	\$374,597,251	\$374,597,251	\$ -
Debt Service	\$237,133,544	\$237,181,056	\$47,512
Cash Financed Capital Improvements	\$46,691,694	\$46,691,694	\$ -
Total: Expenses	\$658,422,489	\$658,470,002	\$47,512
Net Cash Available for PAYGO Capital & Other Cash Needs	\$141,570,292	\$138,889,647	\$(2,680,645)

	DC Water Financial Plan (2024)	Raftelis Model (2024)	Delta
Revenue			
Operating	\$778,520,598	\$775,002,667	\$(3,517,931)
Non-Operating	\$49,184,029	\$49,184,029	\$ -
Total: Revenue	\$827,704,627	\$824,186,696	\$(3,517,931)
Expenses			
Operating	\$386,093,987	\$386,093,987	\$ -
Debt Service	\$247,936,995	\$248,093,112	\$156,117
Cash Financed Capital Improvements	\$48,256,485	\$48,256,485	\$ -
Total: Expenses	\$682,287,467	\$682,443,584	\$156,117
Net Cash Available for PAYGO Capital & Other Cash Needs	\$145,417,159	\$141,743,112	\$(3,674,047)

Raftelis’ model results are predicated on several assumptions. A more thorough discussion of these assumptions can be found in Section 3.3 of this report.

1.3. Cost of Service and Rate Equity

Raftelis was asked if the proposed rates represented the true cost of service. To assure that there was no subsidization within the retail customer base, we developed test year revenue requirements and allocated them to existing rate

structure components using reasonable allocation factors. Dividing the allocated revenue requirement by the units of service yields the cost of service-based rates for all categories but water. Raftelis used a more detailed cost of service analysis, discussed further in the body of the report, to calculate DC Water’s class-based, tiered water rates. Table E-2 presents the allocation of test year revenue requirements to the water volume charge, metering fee, wastewater volume charge, and the CRIAC.

Table E- 2: Cost of Service Unit Costs

	FY 2023	Water	Meter	Wastewater	CRIAC
Retail Revenue Requirements	\$607,502,497	\$162,396,157	\$24,088,233	\$329,633,511	\$91,384,596
Percent of Retail Revenue Requirements	100%	26.7%	4.0%	54.3%	15.0%
Units of Service		30,534,000	258,970	29,279,333	420,000
Units		Ccf	Equiv. Meters	Ccf	ERUs
Calculated Unit Cost		\$5.3185	\$93.0156	\$11.2582	\$217.5824
	FY 2024	Water	Meter	Wastewater	CRIAC
Retail Revenue Requirements	\$637,139,846	\$164,159,626	\$24,092,187	\$338,754,805	\$110,133,229
Percent of Retail Revenue Requirements	100%	25.8%	3.8%	53.2%	17.3%
Units of Service		30,226,000	258,970	28,971,416	420,000
Units		Ccf	Equiv. Meters	Ccf	ERUs
Calculated Unit Cost		\$5.4311	\$93.0308	\$11.6927	\$262.2220

1. Note that final rates are rounded up only once calculated.

Table E- 3: Cost of Service Calculation and Proposed Rates

	FY 2022 (Existing)	FY 2023 (Proposed)	FY 2024 (Proposed)	FY 2023		FY 2024	
				\$ Difference	% Difference	\$ Difference	% Difference
Water Volumetric Residential – Tier 1	\$3.63	\$4.28	\$4.38	\$0.65	17.9%	\$0.10	2.3%
Water Volumetric Residential – Tier 2	\$4.74	\$5.58	\$5.70	\$0.84	17.7%	\$0.12	2.2%
Water Volumetric – Multi-family	\$4.15	\$4.90	\$5.00	\$0.75	18.1%	\$0.10	2.0%
Water Volumetric – Non-Residential	\$4.91	\$5.78	\$5.89	\$0.87	17.7%	\$0.11	1.9%
Sewer Volumetric	\$10.64	\$11.26	\$11.70	\$0.62	5.8%	\$0.44	3.9%
Metering Fee	\$7.75	\$7.75	\$7.75	\$ -	0%	\$ -	0%
Clean Rivers IAC	\$18.40	\$18.14	\$21.86	\$(0.26)	-1.4%	\$3.72	20.5%
WSRF	\$6.30	\$6.30	\$6.30	\$ -	0%	\$ -	0%
WAD Rate	\$3.03	\$3.21	\$3.30	\$0.18	5.9%	\$0.09	2.8%
Groundwater Fee	\$2.83 ¹	\$3.42	\$3.50	\$0.59	20.8%	\$0.08	2.3%

1. The Groundwater Fee currently in effect was originally calculated in 2018, so the 20.8% increase in the proposed fee for FY 2023 reflects increases in costs since 2018.

2. Introduction

DC Water engaged Raftelis to provide consulting services for a Revenue Sufficiency and Cost of Service Study (COS Study). The main purpose of the COS Study was to review DC Water's existing Financial Planning Model (Financial Plan) and its inputs and to calculate cost of service-based retail rates for DC Water's upcoming rate adoption period of FY 2023-FY 2024. The Study was designed to ensure that there were no cross-subsidies among the various water and wastewater retail customer classes.

Raftelis conducted a revenue sufficiency analysis to independently forecast operating and capital costs along with units of service for FY 2023 and FY 2024; these two years served as test years. Raftelis compared their independent financial forecast to the forecast in the Financial Plan, identifying any revenue discrepancies for the test years.

2.1. Deliverables

Raftelis prepared three deliverables for this Study:

1. Revenue sufficiency/cost of service model schedules;
2. A report to document our study processes, results, and recommendations; and
3. A presentation to summarize the results of the study for the Retail Rates Committee of the DC Water Board.

Deliverables were presented in draft form to DC Water staff for review and comment. This report, the second deliverable, gives an overview of the COS Study's most important findings, discussed in detail below.

3. Revenue Sufficiency Analysis

Raftelis' revenue sufficiency analysis was intended to provide an independent forecast of revenues and expenditures. Raftelis completed a revenue sufficiency model (Model) and compared the results of this model to the corresponding results in the Financial Plan.

3.1. Revenue Sufficiency Model

The Model compares the revenues generated from existing rates and charges against DC Water's costs, or revenue requirements. The Model includes an independent forecast of operating and capital costs along with an analysis of the billable units of service. The analysis assumes test years of FY 2023 and FY 2024.

3.1.1. OPERATING EXPENSES

DC Water's actual and projected operating expenses were incorporated into the Model based on information taken from DC Water's FY 2022 Budget, FY 2023 Proposed Budget, and FY 2024 Proposed Budget. Average total O&M cost increases from FY 2022-23 and FY 2023-24 are 4.27%. Although inflation (as measured by the Consumer Price Index) has been less than 4% over the past several years, the potential for future inflation in excess of 4% is realistic. Due to the commodity-intensive nature of the water and sewer industry, which demands significant amounts of treatment chemicals and electricity, DC Water should re-visit budget escalation estimates annually as part of its financial planning process.

Based on these escalation criteria, Raftelis is projecting overall O&M costs of \$381,961,932 and \$398,705,362, respectively, for test years FY 2023 and FY 2024. These figures do not include expenses related to the payment in lieu of taxes (PILOT) or the right of way (ROW) fee. Table 1 shows the increase in operating expenses from FY 2022 to FY 2023 and FY 2024.

Table 1: Projected O&M Expenses

	2022	2023	2024	'22 – '23 Increase
Operations				
Wastewater Treatment - Operations	\$82,145,589	\$80,242,172	\$83,544,135	-2.3%
Wastewater Treatment – Process Engineering	7,448,700	6,978,440	7,315,921	-6.3%
Maintenance Services	20,677,575	20,497,034	21,360,713	-0.9%
Water Operations	69,583,726	72,195,028	75,020,561	3.8%
Sewer Operations (1)	-	15,681,574	16,452,536	n/a
Customer Care	20,971,173	21,079,812	22,102,983	0.5%
Pumping Operations	39,109,403	21,667,589	22,671,446	-44.6%
Engineering & Technical Services	4,630,752	23,336,304	24,498,843	403.9%
Wastewater Engineering	3,455,781	3,432,037	3,603,312	-0.7%
DC Clean Rivers	1,030,129	4,118,082	4,299,489	299.8%
CIP Infrastructure Management	-	5,034,065	5,554,796	n/a
Permit Operations	4,290,464	4,427,766	4,647,867	3.2%
Administration				
General Manager	4,725,569	\$2,772,267	\$2,894,914	-41.3%
Office of the Chief Operating Officer	-	1,432,379	1,495,171	n/a
Office of the Secretary	650,509	635,236	663,667	-2.3%
Internal Audit	764,260	744,837	767,202	-2.5%
Legal Affairs	6,843,000	8,351,049	8,673,619	22.0%
Marketing and Communications	2,952,871	3,243,426	3,408,905	9.8%
Performance	-	2,855,616	2,996,602	n/a
Human Resources	10,062,837	9,927,621	10,376,522	-1.3%
Information Technology	10,695,903	10,252,414	10,632,793	-4.1%
Procurement and Compliance	6,517,147	7,420,658	7,817,442	13.9%
Finance	28,209,348	24,592,101	25,602,220	-12.8%
Non-Ratepayer Revenue Fund	-	1,000,000	1,030,000	n/a
Administrative Office	653,122	753,551	794,903	15.4%
Office of Emergency Management	1,542,736	1,668,965	1,746,359	8.2%
Facilities Management	8,920,978	9,780,657	10,243,796	9.6%
Security	8,124,486	8,651,277	8,936,140	6.5%
Occupational Safety & Health	2,405,209	1,613,907	1,700,590	-32.9%
Fleet Management	7,173,972	7,576,065	7,851,915	5.6%
Total	\$353,585,241	\$381,961,932	\$398,705,362	8.0%

1. Sewer Operations was created as a distinct category (formerly part of "Pumping" in FY 2023).

3.1.2. UNITS OF SERVICE

To project DC Water’s future water revenues, Raftelis analyzed historic billing system data. Raftelis had previously incorporated billing data provided by DC Water Staff from FY 2011 through FY 2017, and Raftelis updated the forecast with FY 2019-2021 data, along with estimated usage data for FY 2022-2024. The data consisted of billed water usage by customer class and category, the number of water meters by meter size per customer class and category, and impervious area as measured by equivalent residential units (ERUs).

Future water consumption projections in the Model are based on estimated FY 2023 and FY 2024 usage with adjustments in subsequent years to reflect projected declines in consumption of 1.0% annually in FY 2025-2030. These declines in consumption are based on an analysis of historical flow data. Raftelis believes that these reductions are appropriate due to expanded use of low-flow plumbing fixtures and a growing culture of resource conservation. This trend is consistent with the per capita reduction seen in other utilities with similar demographics and service area characteristics. DC Water experienced pandemic-related shifts in consumption in early 2020. Stay-at-home orders increased consumption for residential classes and decreased it for non-residential classes. These shifts appear to be transitory and a reversion to historically normal patterns is projected.

Based on a projection for eligible Customer Assistance Program (CAP) accounts, Raftelis included a reduction of 288,000 Ccf each year beginning in FY 2021. Raftelis’ estimation of CAP accounts in FY 2023-FY 2024 is consistent with the Financial Plan, which incorporates 5,000 eligible CAP accounts and an approximate consumption of 48 Ccf per account, per year.

Projected wastewater flow is populated from actual water billings. However, the commercial wastewater category estimated consumption includes units of service for the water exempt category, which includes the Soldiers Home. Based on input from DC Water Staff, it was determined that the water exempt category is still required to pay for sewer services. The exemption from water service billings is a result of an existing agreement where DC Water maintains water facilities at these locations free of charge. Historical and projected consumption is displayed in Table 2.

Table 2: Historical and Projected Consumption per Class and Category

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Water Consumption							
Residential Adjusted	6,888,339	6,719,213	6,635,138	6,332,451	6,238,000	6,042,000	5,979,000
Residential	6,961,844	6,793,773	6,980,738	6,620,451	6,526,000	6,330,000	6,267,000
Tier 1	3,650,820	3,762,759	3,715,677	3,546,173	3,474,566	3,365,394	3,330,303
Tier 2	3,237,519	2,956,454	2,919,461	2,786,278	2,763,434	2,676,606	2,648,697
CAP Accounts	(73,505)	(74,560)	(345,600)	(288,000) ¹	(288,000) ²	(288,000) ²	(288,000) ²
Commercial	12,248,008	11,978,813	10,154,277	9,098,077	10,125,280	10,024,000	9,924,000
Multi-family	8,574,676	8,461,956	9,017,482	9,260,560	8,700,000	8,613,000	8,527,000
Municipal	728,818	765,411	748,941	876,602	792,000	784,000	776,000
Federal	4,339,051	4,287,024	4,587,318	4,813,337	4,209,000	4,300,000	4,257,000
D.C. Housing Authority	800,225	811,671	794,434	808,267	779,000	771,000	763,000
Total Water Consumption	33,579,117	33,024,088	31,937,590	31,189,294	30,843,280	30,534,000	30,226,000
<i>% Change</i>		-1.7%	-3.3%	-2.3%	-1.1%	-1.0%	-1.0%

1. *Estimated*
2. *Projected*

Customer data from FY 2019-2021 was provided by DC Water Staff and served as the basis for projecting customer growth or decline. Because of low historical growth in accounts, user accounts were projected to remain constant each year. Historical actual and future projected customers are presented in Table 3.

Table 3: Historical and Projected Customer Meters per Class and Category

Customer Meters	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Commercial	9,028	9,095	9,095	9,095	9,095	9,095	9,095
Federal	459	462	462	462	462	462	462
DC Housing	1,130	1,127	1,127	1,127	1,127	1,127	1,127
Municipal	517	524	524	524	524	524	524
Multi-Family	8,332	8,446	8,446	8,446	8,446	8,446	8,446
Residential	105,430	107,006	107,006	107,006	107,006	107,006	107,006
Soldier's Home	3	3	3	3	3	3	3
DC Water/Aqueduct	32	41	41	41	41	41	41
Total	124,931	126,704	126,704	126,704	126,704	126,704	126,704

1. *Accounts were projected from FY 2019 actuals to smooth fluctuations in the data due to pandemic impacts.*

Raftelis also projected ERUs for use in the analysis of the CRIAC. Using a revised ERU count from DC Water's most recent CRIAC Model, Raftelis assumed 420,000 CRIAC units beginning in FY 2021.

3.1.3. CAPITAL PLAN FINANCING

Financing for the Capital Plan is consistent with data from the Financial Plan and is displayed in summary in Table 4.

Table 4: Capital Plan Financing

	2022	2023	2024
Beginning Balance	\$72,281,343	\$158,584,153	\$214,655,413
Sources of Funds			
Proceeds from Revenue Bonds	\$400,000,000	\$166,052,000	\$299,929,000
Proceeds from WIFIA Loan	30,000,000	30,000,000	30,000,000
Environmental Impact Bond Proceeds	(25,000,000)	-	-
Proceeds from CP/EMCP/Treasury Notes/Digester Financing Option	-	-	-
Proceeds from CP/EMCP/Treasury Notes Pay-Off	-	-	-
Capital Equipment Financing	-	-	-
Curing Pad and Solar	-	1,165,479	2,338,324
System Availability Fee	7,700,000	7,700,000	7,700,000
Transfer from Operations - CRIAC	52,095,411	52,513,636	63,348,491
Transfer from Operations	104,659,419	112,774,655	109,593,238
Federal Grants – Infrastructure Funding	8,855,000	37,593,790	44,827,603
EPA Grants / DC Reimbursement	42,161,197	27,101,141	30,279,789
CSO Grants	-	-	-
Wholesale Customer Capital Contributions	86,872,000	90,690,000	114,647,000
Interest Income	2,623,153	3,304,107	3,849,313
Subtotal: Sources	\$709,966,180	\$528,894,808	\$706,512,758
Uses of Funds			
Water Projects	\$165,313,000	\$227,116,000	\$218,339,000
Blue Plains Projects	85,979,000	78,574,000	117,545,000
Sanitary Sewer Projects	68,086,000	103,383,000	150,827,000
Combined Sewer	4,919,000	10,929,000	11,240,000
Combined Sewer Long Term Control Plan	147,347,000	106,774,000	66,064,000
Stormwater Projects	7,029,000	11,526,000	5,553,000
Non-Process Facilities	31,439,000	12,052,000	28,160,000
Washington Aqueduct Division Projects	16,875,000	59,628,000	34,749,000
Capital Equipment	37,440,000	33,921,000	33,056,000
Meter Replacement / AMR	3,079,000	3,100,000	3,100,000
Reimbursement for Prior Capital Expenditures	-	-	-
Subtotal: Uses	\$567,506,000	\$647,003,000	\$668,633,000
Sources Minus Uses	\$142,460,180	\$(118,108,192)	\$37,879,758
Ending Balance	\$281,405,247	\$130,946,905	\$135,395,013

DC Water is faced with a significant capital program over the forecast period to address water and wastewater infrastructure needs and system improvements. For the water utility, the primary drivers of the capital program include repair, replacement, and rehabilitation of water distribution system infrastructure; water pumping facility repairs and improvements; continued implementation of the water lead abatement program; water storage facilities repairs and improvements; and capital contributions to the Washington Aqueduct related to water source of supply.

For the wastewater utility, the primary drivers of the capital program include collection system reinvestment, improvements at the Blue Plains WWTP, including enhanced nitrogen removal facilities; repair, replacement, and rehabilitation of the collection and conveyance systems; and Environmental Protection Agency (“EPA”) consent decree requirements associated with DC Water’s Long-term Combined Sewer Overflow Control Plan (“CSO LTCP”).

DC Water anticipates that the capital plan will be financed through a mix of proceeds from revenue bonds and commercial paper, federal grants, District of Columbia reimbursements, capital contributions from wholesale wastewater customers, revenues generated internally from rates, and cash reserves. Based on our evaluation, it appears that the Financial Plan provides for sufficient funding of the capital program. Raftelis also evaluated the proposed capital financing structure, with particular attention paid to assumptions related to the cost of financing for long-term revenue bonds. DC Water’s current underlying bond rating from Standard and Poor’s of AAA is an investment grade rating that indicates a strong capability to meet financial obligations. Moody’s carries a rating of Aa1 for DC Water. Based on current market conditions, and assuming DC Water would either insure or fund a debt service reserve for future revenue bonds, the current estimated range of interest rates assumed in the Financial Plan is reasonable and provides a level of conservatism in the forecast. Regardless, DC Water should revise these assumptions, as appropriate, during its annual financial planning process. It is possible that alternative long-term financing options could be utilized which would require an update to the projected debt service repayment assumptions.

3.1.4. DEBT SERVICE

Debt service within the Model is based, in part, on information provided by DC Water’s Financial Advisor and reflected in the Financial Plan. Raftelis calculated FY 2022-FY 2033 debt service based on projected funding needs in the CIP. In addition to the FY 2022 Subordinate Bond currently on the books, we assumed an additional \$147.3 million in debt would be issued in FY 2022 with a half-year debt service payment. Full debt service on this projected issuance was assumed to occur in FY 2023. It was assumed another \$106.8 million would be issued in FY 2023 with a half year debt service payment. Full debt service on this projected issuance was assumed to occur in FY 2024. These assumptions are consistent with the Financial Plan. A summary of the projected debt from is displayed below in Table 5.

Table 5: Projected Debt Service

	2023	2024
<u>Existing Debt</u>		
Senior Debt		
1998 Revenue Bonds	\$23,369,450	\$8,110,475
Series 2014A Revenue Bond	16,849,000	16,849,000
Series 2017A Revenue Bond	4,591,000	4,591,000
Series 2017B Revenue Bond	13,257,000	13,258,000
Series 2018A Revenue Bond	5,000,000	5,000,000
Series 2018B Revenue Bond	13,328,500	13,326,250
Subtotal: Senior Debt	\$76,395,200	\$61,134,725
Subordinated Debt		
Jennings Randolph	\$805,191	\$805,191
Commercial Paper	2,822,050	2,821,463
EMCP	2,632,175	2,633,375
Series 2010A Subordinate Bond	15,460,301	15,432,289
Series 2012A, B-1, B-2, C Subordinate Bond	-	-
Series 2014B Subordinate Bond	2,500,000	3,252,992
Series 2014C Subordinate Bond	30,006,450	20,287,700
Series 2015A Subordinate Bond	11,925,900	11,924,650
Series 2015B Subordinate Bond	12,806,363	12,806,363
Series 2016A Subordinate Bond	17,039,013	17,039,013
Series 2019A Revenue Bond	4,708,700	4,708,700
Series 2019B Revenue Bond	2,916,000	2,916,000
Series 2019C Revenue Bond	1,741,338	1,741,338
Series 2019D Revenue Bond	12,305,218	12,305,247
Series 2022 Revenue Bond	16,218,168	36,942,512
Subtotal: Subordinate Debt	\$136,583,430	\$145,616,831
Total: Existing Debt	\$210,282,066	\$206,751,556
<u>Planned Debt</u>		
WASA Bonds – Planned	\$26,898,991	\$41,341,555
Total: Planned Debt	\$26,898,991	\$41,341,555
Total Debt	\$237,181,056	\$248,093,111
% Change		4.6%

3.2. Comparison to Forecast

DC Water’s Financial Plan projects surplus revenues of \$141,570,292 in FY 2023 and \$145,417,159 in FY 2024. The variances of \$(2,680,645) in FY 2023 and \$(3,674,047) in FY 2024 when compared to Raftelis’ forecast surpluses of \$138,889,646 and \$141,743,112, respectively, is a result of several factors which are discussed below. While individual variances are highlighted in the following sections, a complete comparison schedule vs. the Financial Plan is also found in the Appendix.

3.2.1. OPERATING REVENUE

As discussed previously in Section 3.1.2, Raftelis has estimated billable water and sewer flows based on FY 2020 and FY 2021 data with adjustments in subsequent years to reflect an anticipated decline in consumption. As a result, Raftelis is projecting operating revenues of \$750,111,139 in FY 2023, which includes \$664,391,069 in retail customer billing revenues and \$85,720,070 in wholesale revenues. Raftelis is projecting operating revenues of \$775,002,667 in FY 2024, which includes \$685,860,428 in retail customer billing revenues and \$89,142,239 in wholesale revenues. A summary of the operating revenue comparison of the Model and the Financial Plan is provided below.

Table 6: Operating Revenue Comparison

Operating Revenue	FY 2023 DC Water Financial Plan	FY 2023 Raftelis Model	Delta
Volumetric Charges	\$488,728,530	\$486,816,576	\$(1,911,953)
Metering Fee	24,082,852	23,361,672	(721,180)
WSRF	39,717,000	39,717,000	-
Right of Way/PILOT	23,070,220	23,070,220	-
CRIAC Revenue	91,425,600	91,425,600	-
Wholesale Revenue	85,720,070	85,720,070	-
Total Operating Revenue	\$752,744,272	\$750,111,139	\$(2,633,133)

Operating Revenue	FY 2024 DC Water Financial Plan	FY 2024 Raftelis Model	Delta
Volumetric Charges	\$491,974,483	\$489,177,732	\$(2,796,751)
Metering Fee	24,082,852	23,361,672	(721,180)
WSRF	39,717,000	39,717,000	-
Right of Way/PILOT	23,429,624	23,429,624	-
CRIAC Revenue	110,174,400	110,174,400	-
Wholesale Revenue	89,142,239	89,142,239	-
Total Operating Revenue	\$778,520,598	\$775,002,667	\$(3,517,931)

3.2.1.1. Volumetric Charges

Revenues from the volumetric charges are calculated primarily based on the projected rates from Raftelis’ COS results multiplied by projected consumption. Slightly different calculation methods resulted in differences between Raftelis’ projections and DC Water’s Financial Plan, but Raftelis’ projections were slightly lower, and thus did not overstate anticipated revenues. In FY 2023, volumetric revenues were 0.4% lower than those in the Financial Plan. Similarly, in FY 2024, volumetric revenues were 0.6% lower than those in the Financial Plan. These slight discrepancies are expected, and do not represent a material difference between Raftelis’ forecast and DC Water’s Financial Plan.

3.2.1.2. Metering Fee

Revenues from the metering fee are calculated based on the projected rates in the Financial Plan multiplied by the projected customers per meter size. They represent the recovery of some additional Customer Service costs related to metering and billing as described in Section 4.6. Raftelis' projections of revenue from the metering fee differ slightly from the Financial Plan because Raftelis' projections are based on the latest available data on DC Water's meter counts, so a small difference in Metering Fee revenues was anticipated. In both FY 2023 and FY 2024, metering fee revenues were 3.0% lower than those in the Financial Plan.

3.2.1.3. Water System Replacement Fee (WSRF)

The WSRF was originally set to recover approximately \$40 million per year for ten years to fund water system renewal and replacement. Revenues from the WSRF are calculated based on the projected rates in the Financial Plan multiplied by the projected customers per meter size. Raftelis' projection of revenue from the WSRF are consistent with the revenue in DC Water's Financial Plan. DC Water is projected to recover \$39,717,000 in both FY 2023 and FY 2024.

3.2.1.4. Impervious Area Charge

Raftelis' projections for CRIAC revenues are consistent with those in the Financial Plan. CRIAC revenues represent the allocation of some Clean Rivers capital costs to the sewer volumetric rate as described in Section 4.6.

3.2.2. NON-OPERATING REVENUE

Raftelis' projection of non-operating revenues reflects the same amount as DC Water's Financial Plan. A comparison of total revenues is shown below.

Table 7: Total Revenue Comparison

	FY 2023 DC Water Financial Plan	FY 2023 Raftelis Model	Delta
Operating Revenue			
Volumetric Charges	\$488,728,530	\$486,816,576	\$(1,911,953)
Metering Fee	24,082,852	23,361,672	(721,180)
Infrastructure Surcharge	39,717,000	39,717,000	-
Right of Way Fee/PILOT	23,070,220	23,070,220	-
CRIAC Revenue	91,425,600	91,425,600	-
Wholesale Revenue	85,720,070	85,720,070	-
Subtotal: Operating Revenue	\$752,744,272	\$750,111,139	\$(2,633,133)
Non-Operating Revenues			
Interest Earnings	\$4,386,863	\$4,386,863	\$ -
Other Revenue	42,668,400	42,668,400	\$ -
Northern Virginia Debt Service	193,246	193,246	\$ -
Subtotal: Non-Operating Revenue	\$47,248,509	\$47,248,509	\$ -
Total Revenue	\$799,992,781	\$797,359,648	\$(2,633,133)

	FY 2024 DC Water Financial Plan	FY 2024 Raftelis Model	Delta
Operating Revenue			
Volumetric Charges	\$491,974,483	\$489,177,732	\$(2,796,751)
Metering Fee	24,082,852	23,361,672	(721,180)
Infrastructure Surcharge	39,717,000	39,717,000	-
Right of Way Fee/PILOT	23,429,624	23,429,624	-
CRIAC Revenue	110,174,400	110,174,400	-
Wholesale Revenue	89,142,239	89,142,239	-
Subtotal: Operating Revenue	\$778,520,598	\$775,002,667	\$(3,517,931)
Non-Operating Revenues			
Interest Earnings	\$4,427,383	\$4,427,383	\$ -
Other Revenue	44,563,400	44,563,400	\$ -
Northern Virginia Debt Service	193,246	193,246	\$ -
Subtotal: Non-Operating Revenue	\$49,184,029	\$49,184,029	\$ -
Total Revenue	\$827,704,627	\$824,186,696	\$(3,517,931)

The Model forecasts total revenues in the test years (FY 2023 and FY 2024) that diverge from DC Water’s projections by less than 0.5% for each test year.

3.2.3. OPERATING EXPENSES

Operating expenses in the Model were forecast from DC Water’s FY 2022 Budget and FY 2023-2024 Proposed Budgets. When compared to the Financial Plan, FY 2023-FY 2024 operating expenses are identical given that escalation rates used to project expenses are identical. Note that the following operating expenses are shown with capitalized labor deducted from total Personnel Services.

Table 8: Operating Expense Comparison

	FY 2023 DC Water Financial Plan	FY 2023 Raftelis Model	Delta
Personnel Services	\$155,787,994	\$155,787,994	\$ -
Contractual Services	88,504,269	88,504,269	\$ -
Water Purchases	40,334,030	40,334,030	\$ -
Chemicals & Supplies	36,993,885	36,993,885	\$ -
Utilities & Rent	28,798,903	28,798,903	\$ -
Small Equipment	1,107,950	1,107,950	\$ -
PILOT/ROW Fee	23,070,220	23,070,220	\$ -
Total Operating Expenses	\$374,597,251	\$374,597,251	\$ -

	FY 2024 DC Water Financial Plan	FY 2024 Raftelis Model	Delta
Personnel Services	\$160,468,581	\$160,468,581	\$ -
Contractual Services	91,258,703	91,258,703	\$ -
Water Purchases	41,544,051	41,544,051	\$ -
Chemicals & Supplies	38,305,358	38,305,358	\$ -
Utilities & Rent	29,946,481	29,946,481	\$ -
Small Equipment	1,141,189	1,141,189	\$ -
PILOT/ROW Fee	23,429,624	23,429,624	\$ -
Total Operating Expenses	\$386,093,987	\$386,093,987	\$ -

3.2.4. DEBT SERVICE

Because Raftelis updated the Model’s existing debt service based on actual principal and interest schedules provided in the official statement to investors. Slightly different assumptions were used to forecast planned debt issuance, resulting in a de minimis difference in planned debt service. A summary of the debt service comparison is displayed in Table 9.

Table 9: Debt Service Comparison

Debt Service	DC Water Financial Plan 2023	Raftelis Model 2023	Delta
1998 Revenue Bonds	\$23,369,450	\$23,369,450	\$ -
Series 2014A Revenue Bond	16,849,000	16,849,000	-
Series 2017A Revenue Bond	4,591,000	4,591,000	-
Series 2017B Revenue Bond	13,257,250	13,257,250	-
Series 2018A Revenue Bond	5,000,000	5,000,000	-
Series 2018B Revenue Bond	13,328,500	13,328,500	-
WIFIA Loan	-	-	-
Jennings Randolph	805,192	805,192	-
Commercial Paper	2,822,050	2,822,050	-
EMCP	2,632,175	2,632,175	-
Series 2010A Subordinate Bond	15,460,301	15,460,301	-
Series 2012A, B-1, B-2, C Subordinate Bond	-	-	-
Series 2014B Subordinate Bond	2,500,000	2,500,000	-
Series 2014C Subordinate Bond	30,006,450	30,006,450	-
Series 2015A Subordinate Bond	11,925,900	11,925,900	-
Series 2015B Subordinate Bond	12,806,363	12,806,363	-
Series 2016A Subordinate Bond	17,039,013	17,039,013	-
Series 2019A Subordinate Bond	4,708,700	4,708,700	-
Series 2019B Subordinate Bond	2,916,000	2,916,000	-
Series 2019C Subordinate Bond	1,741,338	1,741,338	-
Series 2019D Subordinate Bond	12,305,218	12,305,218	-
Series 2022 Subordinate Bond	16,218,168	16,218,168	-
WASA Bonds – Planned	26,851,477	26,898,991	47,512
Total: Debt Service	\$237,133,544	\$237,181,056	\$47,512

1. The delta in total debt service also reflects de minimis differences in existing debt totaling \$2.00, which was applied as a reduction from the \$47,514 delta in planned debt.

Debt Service	DC Water Financial Plan 2024	Raftelis Model 2024	Delta
1998 Revenue Bonds	\$8,110,475	\$8,110,475	\$ -
Series 2014A Revenue Bond	16,849,000	16,849,000	-
Series 2017A Revenue Bond	4,591,000	4,591,000	-
Series 2017B Revenue Bond	13,258,000	13,258,000	-
Series 2018A Revenue Bond	5,000,000	5,000,000	-
Series 2018B Revenue Bond	13,326,250	13,326,250	-
Jennings Randolph	805,191	805,191	-
Commercial Paper	2,821,463	2,821,463	-
EMCP	2,633,375	2,633,375	-
Series 2010A Subordinate Bond	15,432,289	15,432,289	-
Series 2012A, B-1, B-2, C Subordinate Bond	-	-	-
Series 2014B Subordinate Bond	3,252,992	3,252,992	-
Series 2014C Subordinate Bond	20,287,700	20,287,700	-
Series 2015A Subordinate Bond	11,924,650	11,924,650	-
Series 2015B Subordinate Bond	12,806,363	12,806,363	-
Series 2016A Subordinate Bond	17,039,013	17,039,013	-
Series 2016B Subordinate Bond	\$812,500	\$812,500	-
Series 2019A Subordinate Bond	4,708,700	4,708,700	-
Series 2019B Subordinate Bond	2,916,000	2,916,000	-
Series 2019C Subordinate Bond	1,741,338	1,741,338	-
Series 2019D Subordinate Bond	12,305,247	12,305,247	-
Series 2022 Subordinate Bond	36,942,512	36,942,512	-
WASA Bonds – Planned	41,185,439	41,341,555	\$156,117
Total: Debt Service	\$247,936,995	\$248,093,112	\$156,117

1. The delta in total debt service also reflects de minimis differences in existing debt of less than \$1.00, which was applied as an addition to the \$156,116 delta in planned debt.

Debt service for a planned FY 2022 bond issue vary slightly due to the use of different assumptions on the timing and future rates associated with future debt.

To summarize, a comparison of total revenues and expenses is provided in Table 10.

Table 10: Comparison of Revenues and Expenses

	DC Water Financial Plan (2023)	Raftelis Model (2023)	Delta
Revenue			
Operating	\$752,744,272	\$750,111,139	\$(2,633,133)
Non-Operating	\$47,248,509	\$47,248,509	\$ -
Total: Revenue	\$799,992,781	\$797,359,648	\$(2,633,133)
Expenses			
Operating	\$374,597,251	\$374,597,251	\$ -
Debt Service	\$237,133,544	\$237,181,056	\$47,512
Cash Financed Capital Improvements	\$46,691,694	\$46,691,694	\$ -
Total: Expenses	\$658,422,489	\$658,470,002	\$47,512
Net Cash Available for PAYGO Capital & Other Cash Needs	\$141,570,292	\$138,889,646	\$(2,680,645)

	DC Water Financial Plan (2024)	Raftelis Model (2024)	Delta
Revenue			
Operating	\$778,520,598	\$775,002,667	\$(3,517,931)
Non-Operating	\$49,184,029	\$49,184,029	\$ -
Total: Revenue	\$827,704,627	\$824,186,696	\$(3,517,931)
Expenses			
Operating	\$386,093,987	\$386,093,987	\$ -
Debt Service	\$247,936,995	\$248,093,112	\$156,117
Cash Financed Capital Improvements	\$48,256,485	\$48,256,485	\$ -
Total: Expenses	\$682,287,467	\$682,443,584	\$156,117
Net Cash Available for PAYGO Capital & Other Cash Needs	\$145,417,159	\$141,743,112	\$(3,674,047)

3.2.5. REVENUE SUFFICIENCY ANALYSIS FINDINGS

Based on our independent projection based on rates and units of service (number of accounts, billed consumption, and impervious ERUs), Raftelis is able to conclude the following:

- Revenues under proposed rate increases are sufficient to fund utility cash requirements in FY 2023 and FY 2024;
- Reserve funds can be maintained at target levels; and
- Debt service coverage is adequate to meet required bond covenants.

4. Cost of Service Analysis

Raftelis evaluated the level of rate equity under the current rate structure. By developing cost of service-based rates and comparing them to proposed DC Water rates for the test years, FY 2023-FY 2024, Raftelis determined if existing water and sewer customer classes were subsidizing each other. Raftelis used the Model described in the previous sections to allocate costs and calculate cost of service-based rates and charges.

4.1. Revenue Requirements

To forecast the level of revenue necessary to ensure financial sufficiency for the utility, revenue requirements must be identified and projected for the test years. Revenue requirements include all costs incurred to operate the water and wastewater systems. These costs represent the annual cash needs of the utility for operation, but also examine existing and proposed debt, debt service coverage requirements, and the funding of target reserve fund balances. Revenue requirements are funded through sources identified in DC Water's capital improvement plan such as revenue bonds, capital reserves, and current year rate revenues. The revenue requirements identified in this process represent the costs that are currently being recovered from the retail rates.

Operations and Maintenance Expenses. First and foremost, the utility must recover costs associated with the routine operation, maintenance, and repair of the system. This component includes items in the DC Water budget such as labor, power, materials, PILOT, ROW fees, and most other costs associated with the day-to-day functioning of the system.

Capital Improvement Plan. Capital needs are one of the single largest components of a water and wastewater utility's cost structure. These expenditures pay for necessary infrastructure rehabilitation, replacements, expansions, and upgrades. Often, a portion of these costs are recovered through fund balance contributions or rate revenue with the balance funded through debt. Since DC Water has designed its metering fee to also recover ongoing AMR costs, this item in the Model has been added as an adjustment and included in the net revenue requirements.

Capital Financing Plan. Capital needs can be funded in a variety of ways, including, for example, revenue bonds, revolving fund loans, and rate revenues. By using the optimal blend of funding sources, it is possible to manage rate impacts, financial stability, and equitably allocate costs to customers over the useful life of the assets.

Debt Service Coverage Requirements. In addition to meeting cash flow needs, revenues must be adequate to satisfy minimum debt service coverage requirements set forth in DC Water's bond covenants. These requirements stipulate minimum debt coverage ratios as well as what revenues and expenses must be included in calculating coverage ratios. DC Water has set a more stringent management target coverage level of 1.6 times, tied to revenue requirements, to ensure availability of cash-funded capital and debt service as a percentage of revenue remains at sustainable levels.

Revenue requirements for each test year are presented in Table 11. Note that the PILOT/ROW Remittance is not included, because although it is an expense, it is ultimately reimbursed by the District of Columbia and is therefore not truly part of DC Water's cost of service.

Table 11: Revenue Requirements for Rate Calculation

Revenue Requirements	FY 2023	FY 2024
Operating Expenses¹	\$381,961,932	\$398,705,362
Debt Service	237,181,056	248,093,111
Adjustments – Coverage Allowance	144,808,634	151,355,867
Total Revenue Requirements	\$763,951,622	\$798,154,340

1. *Unlike the operating expenses shown in Table 10, operating expenses used for rate calculation purposes exclude District charges (payment in lieu of taxes), as these are not direct expenses for DC Water. However, operating expenses for rate calculation include capitalized labor expenses, resulting in a net increase from the operating expenses shown in Table 10.*

The revenue requirements are offset by operating and non-operating income other than user charges, resulting in net revenue requirements. The net revenue requirements represent the level of revenues that must be generated from retail user charges to meet the utility's operating and capital needs. Revenue offsets itemized within the Model include wholesale revenues, miscellaneous fees, and interest income. Table 12 summarizes the revenue offsets in the test years.

Table 12: Test Years Revenue Offsets (FY 2023 and FY 2024)

Revenue Offsets	FY 2023	FY 2024
Wholesale Revenue		
LCSA + PI	\$(10,955,826)	\$(11,271,129)
WSSC	(60,599,013)	(63,108,918)
Fairfax County	(14,165,231)	(14,762,192)
Other Revenue		
IMA Indirect Cost Reimbursement for Capital Projects	\$(5,934,000)	\$(7,799,000)
Development Contracts/Water Service Fees, Taps	(4,000,000)	(4,000,000)
Development Contracts/Liability Deposits/Sewer Service Fees	(2,000,000)	(2,000,000)
Funding for Non-Ratepayer Revenue Fund	(1,000,000)	(1,030,000)
Commercial Water Maintenance	(32,000)	(32,000)
DC Fire Protection Fee	(11,535,000)	(11,535,000)
System Availability Fee (SAF)	(7,700,000)	(7,700,000)
Washington Aqueduct's Backwash- DCW's prorata share	(3,275,400)	(3,275,400)
Transfer from DC PILOT/ROW Fund	-	-
DC Contribution of 50% PILOT Escrow to DCW	-	-
Sales to DC Agencies- Steam/Meter	(170,000)	(170,000)
Miscellaneous Revenues (Bid Deposits, Fleet Auction, Compost Sale)	(6,000,000)	(6,000,000)
Pipe Repair Sales/Replacement	(22,000)	(22,000)
Stormwater	(1,000,000)	(1,000,000)
Northern Virginia Debt Service	(193,246)	(193,246)
WSRF	(39,717,000)	(39,717,000)
Interest Income	(4,161,829)	(4,150,788)
Total Revenue Offsets	\$(172,460,545)	\$(177,766,673)
Total Revenue Requirements	\$763,951,622	\$798,154,340
Net Revenue Requirements	\$591,491,077	\$620,387,667

Prior to finalizing net revenue requirements, some adjustments were made to ensure accuracy for the CRIAC calculation, and to account for delinquency rates (assumed to be 3%) when setting rates. The table below shows how the net revenue requirements of \$591,491,077 and \$562,628,383 for FY 2023 and FY 2024, respectively, were adjusted.

Table 13: Adjustments to Net Revenue Requirements

Revenue Requirements	FY 2023	FY 2024
Unadjusted Net Revenue Requirement	\$591,491,077	\$620,387,667
Remove Capitalized O&M from CRIAC	(2,182,828)	(2,305,292)
Add \$500,000 for CRIAC CAP	500,000	500,000
Add Delinquency Adjustment (3%)	17,694,247	18,557,471
Total Adjusted Revenue Requirements	\$607,502,497	\$637,139,846

4.2. Allocation of Costs

Once the revenue requirements were projected for the test years, Raftelis evaluated the appropriateness of the allocation factors used in the most recent cost of service analysis. Specifically, Raftelis reviewed each major category of operating costs and identified a reasonable basis of allocation amongst the water volumetric charge, wastewater volumetric charge, and metering fee. Costs allocated to the wastewater volumetric charge were then allocated between the wastewater volumetric charge and the impervious area fee based on information provided in the engineering allocation analysis.

4.2.1. COST OF SERVICE INITIATIVES

The COS process included several initiatives to re-allocate costs. First, 37% of the costs associated with the CRIAC were re-allocated to the sewer volumetric rate. This re-allocation reflects the fact that the sewer utility pays for part of the Clean Rivers program expenses. This effort began in the prior COS Study and is fully phased in as part of this study. Second, the DC Water Operations budget included a reorganization of functions into the Pumping Operations division which required development of blended allocation between water and sewer volumetric rates. Finally, the revenue collected from the Water System Replacement Fee, designed to fund 1% of DC Water’s annual renewal and replacement program, was used to offset the water utility’s revenue requirements, resulting in a decrease in all water volumetric charges.

4.2.2. COST ALLOCATION METHODOLOGY

Revenue requirements and revenue offsets related directly to providing water service or sewer service were allocated 100% to water or sewer, respectively. Revenue requirements and revenue offsets related entirely to the CSO LTCP were allocated 100% to the CRIAC. Customer service costs were allocated to the metering fee to account for the costs associated with meters and billing. The remaining costs were divided between water and sewer because almost all customers receive a bill for both services. For other direct operating costs, such as Maintenance Services, the same allocation factors were used as in the prior COS Study, with the majority of these costs allocated to wastewater. Engineering and Technical Services, which increased in cost since the previous COS study, are allocated mostly to sewer using the same allocation as Maintenance Services. New O&M categories, CIP Infrastructure Management and Permit Operations, were allocated based on CIP funding allocations and consultation with DC Water staff, respectively. Raftelis used similar percentages as in the last COS study to allocate Administration costs, which were

based on reasonable allocation factors, such as revenues, employees, vehicles, etc., that were related to individual budget centers. These assumptions are consistent with factors identified in DC Water’s existing inter-municipal agreements (“TMA”).

Responsibility for debt service coverage is distributed proportionately amongst the rates and charges based on the distribution of debt associated with water, sewer, and the CSO LTCP, respectively. Raftelis reviewed and updated allocations of existing debt service based on actual CIP expenditures. Future debt service associated with planned revenue bonds were allocated proportionately based on the projects identified in the CIP.

Table 14 presents the allocation of test year revenue requirements to the water volumetric charge, metering fee, wastewater volumetric charge, and the CRIAC. For the purpose of unit cost calculations, total revenue requirements allocated to each charge component were increased by 3% to reflect the rate of anticipated bill delinquencies prior to calculating rates.

Table 14: Net Revenue Requirement Allocation and Cost of Service Calculation

	FY 2023	Water	Meter	Wastewater	CRIAC
Retail Revenue Requirements	\$607,502,497	\$162,396,157	\$24,088,233	\$329,633,511	\$91,384,596
Percent of Retail Revenue Requirements	100%	26.7%	4.0%	54.3%	15.0%
Units of Service		30,534,000	258,970	29,279,333	420,000
Units		Ccf	Equiv. Meters	Ccf	ERUs
Calculated Unit Cost		\$5.3185	\$93.0156	\$11.2582	\$217.5824

	FY 2024	Water	Meter	Wastewater	CRIAC
Retail Revenue Requirements	\$637,139,846	\$164,159,626	\$24,092,187	\$338,754,805	\$110,133,229
Percent of Retail Revenue Requirements	100%	25.8%	3.8%	53.2%	17.3%
Units of Service		30,226,000	258,970	28,971,416	420,000
Units		Ccf	Equiv. Meters	Ccf	ERUs
Calculated Unit Cost		\$5.4311	\$93.0308	\$11.6927	\$262.2220

1. Note that final rates are rounded up only once calculated.

4.3. Metering Fee

The cost pool for the metering fee includes total revenue requirements of \$24,088,233 in FY 2023 and \$24,092,187 in FY 2024. The COS rates of \$7.75/month in both FY 2023 and FY 2024 remain unchanged from the existing metering fee.

4.4. Water Volumetric Rate

As part of a previous COS Study, Raftelis recommended a class-based water volumetric rate to DC Water which was subsequently implemented in 2016. In a class-based volumetric rate structure, the customer classes that exhibit more peaking in their water usage as compared to other classes are required to pay for their larger share of peaking-related costs. Calculating these rates involves allocating water system volumetric costs between base, or average, demand, and peak-demand, a two-step process.

The first step involves the allocation of all water system cost into functional components consistent with the operating characteristics of the utility. For DC Water these functional components included:

- Source of Supply and Treatment;
- Distribution;
- Storage;
- Pumping;
- Customer Service/Meter; and
- Administration/General.

Raftelis worked closely with DC Water Staff to review and evaluate water system operating costs and developed allocation factors to assign these costs into the categories identified above. Raftelis also reviewed historical capital expenditures identified in the Financial Plan over the past decade, which were used as a basis for allocating debt service and coverage between water source of supply and treatment and the distribution system. Other water revenues exclusive of user charges (revenue offsets) were allocated to the various system functions based on the revenue source. The most significant revenue offsets of note were the DC Fire Protection Fee, which was allocated evenly between water source of supply and treatment and water distribution, water service fees/taps, which was assigned to water distribution, and Water System Replacement Fee (WSRF) revenue, offsets the water volumetric revenue requirement.

Table 15 summarizes the allocation of water system costs to functional categories. Supporting detail for the cost allocations is provided in the Appendix.

Table 15: Allocation of Water Costs into Functional Categories

	FY 2023 \$ Allocated to Water	Source of Supply & Treatment	Distribution	Storage	Pumping	Customer Service/ Meter	Admin/ General
Operations	\$88,227,252	\$5,854,451	\$61,106,402	\$7,713,129	\$9,758,904	\$955,420	\$2,838,947
Administration	\$46,472,413	\$ -	\$ -	\$ -	\$ -	\$ -	\$46,472,413
Debt Service	\$57,141,324	\$15,520,251	\$37,709,205	\$ -	\$ -	\$3,411,869	\$500,000
Revenue Offsets	\$(61,745,202)	\$(6,385,532)	\$(10,587,532)	\$ -	\$ -	\$ -	\$(44,772,139)
Adjustment for Coverage	\$33,984,795	\$9,312,150	\$22,625,523	\$ -	\$ -	\$2,047,121	\$ -
Net Water System Revenue Requirements	\$164,080,581	\$24,301,321	\$110,853,598	\$7,713,129	\$9,758,904	\$6,414,410	\$5,039,220
% Allocation		14.8%	67.6%	4.7%	5.9%	3.9%	3.1%

	FY 2024 \$ Allocated to Water	Source of Supply & Treatment	Distribution	Storage	Pumping	Customer Service/Meter	Admin/General
Operations	\$91,724,454	\$6,133,169	\$63,466,032	\$8,010,972	\$10,135,745	\$1,001,794	\$2,976,743
Administration	\$48,434,742	\$ -	\$ -	\$ -	\$ -	\$ -	\$48,434,742
Debt Service	\$54,268,439	\$14,934,835	\$35,987,733	\$ -	\$ -	\$2,845,871	\$500,000
Revenue Offsets	\$(61,755,234)	\$(6,383,892)	\$(10,585,892)	\$ -	\$ -	\$ -	\$(44,785,450)
Adjustment for Coverage	\$32,261,064	\$8,960,901	\$21,592,640	\$ -	\$ -	\$1,707,523	\$ -
Net Water System Revenue Requirements	\$164,933,465	\$23,645,013	\$110,460,512	\$8,010,972	\$10,135,745	\$5,555,188	\$7,126,035
% Allocation		14.3%	67.0%	4.9%	6.1%	3.4%	4.3%

1. Note that the water revenue requirements above do not include the 3% delinquency adjustment, and they also do not include the re-allocation of a portion of water costs to the metering fee, shown in the "Customer Service/Meter" column of Table 16. Therefore, they differ from the total water revenue requirements shown in Table 14.

Once costs were allocated into functional components, the next step in the process was to allocate functional costs into service cost or behavioral cost components, particularly volumetric costs into base and peaking components. Drawing on discussion with DC Water staff and industry experience, Raftelis developed reasonable percentages for distributing costs between serving base and peak demand. Table 16 summarizes the allocation of water system costs to functional components. Supporting detail for the cost allocations is provided in the Appendix.

Table 16: Allocation of Functional Costs into Cost Categories

	FY 2023	Base	Extra Capacity	Customer Service/Meter	Admin/General
Source of Supply (1)	\$64,635,351	\$50,790,961	\$13,844,390	\$ -	\$ -
Distribution	70,519,568	59,941,633	10,577,935	-	-
Storage	7,713,129	6,170,503	1,542,626	-	-
Pumping	9,758,904	4,879,452	4,879,452	-	-
Customer Service/Meter	6,414,410	-	-	6,414,410	-
Admin/General	5,039,220	-	-	-	5,039,220
	\$164,080,581	\$121,782,548	\$30,844,403	\$6,414,410	\$5,039,220

	FY 2024	Base	Extra Capacity	Customer Service/Meter	Admin/General
Source of Supply (1)	\$65,189,064	\$51,226,073	\$13,962,991	\$ -	\$ -
Distribution	68,916,461	58,578,992	10,337,469	-	-
Storage	8,010,972	6,408,778	1,602,194	-	-
Pumping	10,135,745	5,067,872	5,067,872	-	-
Customer Service/Meter	5,555,188	-	-	5,555,188	-
Admin/General	7,126,035	-	-	-	7,126,035
	\$164,933,465	\$121,281,715	\$30,970,527	\$5,555,188	\$7,126,035

1. *Water purchase costs were re-allocated discretely in this step from Distribution to Source of Supply (compare to Net Water System Revenue Requirements in Table 15).*

4.4.1. WATER SUPPLY & TREATMENT

DC Water, the City of Arlington (Arlington), and the City of Falls Church (Falls Church) purchase potable water from the Washington Aqueduct. The total annual cost of the Aqueduct, which is operated by the Army Corps of Engineers, is allocated amongst these three utilities based on both average and peak usage. The cost allocation methodology assigns costs into fixed and variable components. Fixed costs, which represent the majority of operating costs and include costs related to providing system capacity, are allocated based on peak-daily demand. Variable costs, which are a function of the amount of water produced and include chemicals and electricity, are allocated based on average usage.

It is important to note the wholesale water purchase methodology does not include a specific allocation of system capacity that DC Water has “purchased” in the Washington Aqueduct. However, DC Water pays for extra water capacity to meet peak demand, so it is reasonable to allocate some portion of source of supply and treatment costs to an extra capacity component. For the purpose of this analysis, and based on a review of historical billing data, Raftelis assigned 78% of water source of supply and treatment to the base component and the remaining 22% of water source of supply and treatment to the extra capacity component. Although it would be preferable to review more detailed water production statistics to enhance the precision of this estimate, DC Water does not own water production facilities, so allocating about a quarter of source of supply and treatment costs to extra capacity is reasonable and consistent with industry standards and practices.

4.4.2. WATER DISTRIBUTION

Based on the results of the Customer Class Segmentation Study completed by Raftelis in 2011, DC Water’s system peaks significantly in aggregate. This is consistent with a predominantly urban customer base with more limited elective consumption, particularly irrigation from residential customers. As a result, a significant portion of water transmission and distribution costs are associated with serving a base level of demand. However, it is a common practice within the industry to allocate a small percentage of distribution system costs to a peaking component, as DC Water has sized its system to serve peak demand. For this COS Study, Raftelis assigned 15% of the distribution system costs to system peaking. We believe this is consistent to percentages used in other studies for utilities with similar operating characteristics.

4.4.3. WATER STORAGE

Like water distribution, it is reasonable to allocate a portion of water storage costs to a peaking component. DC Water utilizes storage facilities to provide adequate supply and pressure to serve both average and peak demand. Because peaking is relatively low, the extra capacity component should include a relatively small portion of total

storage costs. For this COS analysis, Raftelis assigned 20% of the storage costs to system peaking. We believe this is consistent with percentages used in other studies for utilities with similar operating characteristics.

4.4.4. WATER PUMPING

A significant portion of the costs allocated to water pumping are associated with the electricity required to operate the pumping facilities. DC Water has sized its pumping equipment to serve both average and peak demand. During peak times, DC Water pays additional cost for power to accommodate the higher demand for pumping, and it is appropriate to allocate this additional cost to a peaking component. As a result, Raftelis has assigned 50% of the pumping costs to system peaking. We believe this is consistent to percentages used in other studies for utilities with similar operating characteristics.

Raftelis reviewed and evaluated peak monthly usage compared to average monthly usage for a five-year period from 2012-2017 for its established customer classes. The peak monthly capacity factors from this analysis were applied to projected annual usage in FY 2023 and FY 2024. The max month total capacity is determined by multiplying the average monthly usage by the peaking factor for each customer class. The total monthly capacity is subtracted from the average monthly usage to determine the extra capacity. The results are presented in Table 17.

Table 17: Peak Monthly Flow by Customer Class

	Base (FY 2023)		Max-Month (FY 2023)		
	Annual Usage (CCF)	Average Monthly Usage (CCF)	Peaking Factor	Total Monthly Capacity (CCF)	Extra Capacity (CCF)
Residential Tier 1, 0-4 ccf	3,365,394	280,450	1.00	280,450	-
Residential Tier 2, >4 ccf	2,676,606	223,051	1.34	298,888	75,837
Multi-Family	9,384,000	782,000	1.16	907,120	125,120
Commercial	10,024,000	835,333	1.39	1,161,113	325,780
Federal	4,300,000	358,333	1.39	498,083	139,750
Municipal	784,000	65,333	1.39	90,813	25,480
Total	30,534,000	2,544,500		3,236,467	691,967

	Base (FY 2024)		Max-Month (FY 2024)		
	Annual Usage (CCF)	Average Monthly Usage (CCF)	Peaking Factor	Total Monthly Capacity (CCF)	Extra Capacity (CCF)
Residential Tier 1, 0-4 ccf	3,330,303	277,525	1.00	277,525	-
Residential Tier 2, >4 ccf	2,648,697	220,725	1.34	295,771	75,046
Multi-Family	9,290,000	774,167	1.16	898,033	123,867
Commercial	9,924,000	827,000	1.39	1,149,530	322,530
Federal	4,257,000	354,750	1.39	493,103	138,353
Municipal	776,000	64,667	1.39	89,887	25,220
Total	30,226,000	2,518,833		3,203,849	685,016

Allocation factors for base and peaking were determined based on the proportion of annual usage and extra capacity, respectively, falling under each customer class category. These factors were multiplied by the costs allocated to base

and peak flows, respectively. The volumetric revenue requirements were escalated at a delinquency rate of 3%. The result was a distribution of water volumetric revenue requirements by customer class (see Table 18).

Table 18: Allocation of Base and Peak Volumetric Costs by Customer Class

FY 2023	Base	Peaking	Base	Peaking	Allocation for Volumetric Revenue Requirements
Residential Tier 1, 0-4 ccf	11.0%	0.0%	\$13,978,032	\$ -	\$14,397,373
Residential Tier 2, >4 ccf	8.8%	11.0%	11,117,178	3,380,438	14,932,544
Multi-Family	30.7%	18.1%	38,976,075	5,577,218	45,889,892
Commercial	32.8%	47.1%	41,634,290	14,521,628	57,840,595
Federal	14.1%	20.2%	17,859,881	6,229,349	24,811,907
Municipal	2.6%	3.7%	3,256,313	1,135,770	4,523,845
<i>Total</i>	100%	100%	\$126,821,769	\$30,844,403	\$162,396,157

FY 2024	Base	Peaking	Base	Peaking	Allocation for Volumetric Revenue Requirements
Residential Tier 1, 0-4 ccf	11.0%	0.0%	\$14,147,976	\$ -	\$14,572,415
Residential Tier 2, >4 ccf	8.8%	11.0%	11,252,340	3,392,955	15,084,654
Multi-Family	30.7%	18.1%	39,466,287	5,600,188	46,418,469
Commercial	32.8%	47.1%	42,159,681	14,582,039	58,443,972
Federal	14.1%	20.2%	18,084,821	6,255,113	25,070,132
Municipal	2.6%	3.7%	3,296,646	1,140,232	4,569,984
<i>Total</i>	100%	100%	\$128,407,750	\$30,970,527	\$164,159,626

Volumetric revenue requirements were divided by the respective usage in each customer class, resulting in cost of service-based rates, below.

Table 19: Class-Based Volumetric Rates

FY 2023	Volumetric Revenue Requirements	Annual Usage (CCF)	Class Based Volumetric Rate (per CCF)
Residential Tier 1	\$14,397,373	3,365,394	\$4.28
Residential Tier 2	14,932,544	2,676,606	\$5.58
Multi-Family	45,889,892	9,384,000	\$4.90
Commercial	57,840,595	10,024,000	\$5.78
Federal	24,811,907	4,300,000	\$5.78
Municipal	4,523,845	784,000	\$5.78
<i>Total</i>	\$162,396,157	30,534,000	

FY 2024	Volumetric Revenue Requirements	Annual Usage (CCF)	Class Based Volumetric Rate (per CCF)
Residential Tier 1	\$14,572,415	3,330,303	\$4.38
Residential Tier 2	15,084,654	2,648,697	\$5.70
Multi-Family	46,418,469	9,290,000	\$5.00
Commercial	58,443,972	9,924,000	\$5.89
Federal	25,070,132	4,257,000	\$5.89
Municipal	4,569,984	776,000	\$5.89
Total	\$164,159,626	30,226,000	

1. Note that rates shown are rounded.

For FY 2023, allocations to the water volumetric cost pool result in revenue requirements of \$162,396,157 which is then divided by projected units of service for the test year of 30,534,000 Ccf. Non-Residential customers had the highest peaking factors and, therefore, were allocated a higher proportion of peaking costs, resulting in a volumetric rate of \$5.78 per Ccf, which is \$1.50 per Ccf higher than the Tier 1 Residential rate of \$4.28 per Ccf. Conversely, Multi-Family customers had lower peaking factors and, therefore, were allocated a lower proportion of peaking costs, resulting in a volumetric rate for Multi-Family customers of \$4.90 per Ccf, which is \$0.68 per Ccf lower than the Tier 2 Residential rate of \$5.58 per Ccf.

For FY 2024, allocations to the water volumetric cost pool result in revenue requirements of \$164,159,626, which is then divided by projected units of service for the test year of 30,226,000 Ccf. Non-Residential customers had the highest peaking factors and, therefore, were allocated a higher proportion of peaking costs, resulting in a volumetric rate of \$5.89 per Ccf, which is \$1.51 per Ccf higher than the Tier 1 Residential rate of \$4.38 per Ccf. Conversely, Multi-Family customers had lower peaking factors and, therefore, were allocated a lower proportion of peaking costs, resulting in a volumetric rate for Multi-Family customers of \$5.00 per Ccf, which is \$0.70 per Ccf lower than the Tier 2 Residential rate of \$5.70 per Ccf.

4.5. Wastewater Volumetric Rate

One major objective of the cost of service process is to appropriately rebalance revenue recovery between water and wastewater rates. Since the last study, water costs have increased faster than wastewater costs, suggesting a need to rebalance volumetric rates. As compared to water revenue requirements, which totaled \$162,396,157 and \$164,159,626 in FY 2023 and FY 2024, respectively, wastewater revenue requirements totaled \$329,633,511 in FY 2023 and \$338,754,805 in FY 2024. Wastewater revenue requirements were divided by the test years' projected usage volumes of 29,279,333 Ccf and 28,971,416 Ccf, respectively, which results in respective volumetric rates of \$11.26 and \$11.70.

4.6. Impervious Area Charge

Total revenue requirements allocated to the CRIAC for the test years totaled \$91,384,596 for FY 2023 and \$110,133,229 for FY 2024. As discussed in section 4.2.1, 37% of the CRIAC costs were re-allocated to the wastewater volumetric charge to reflect the fact that wastewater pays for a portion of CSO mitigation costs. Raftelis divided the CRIAC revenue requirements by units of service, as measured by ERUs, and calculated respective rates of \$18.14 and \$21.86 per ERU for FY 2023 and FY 2024. The roughly 20% increase in the CRIAC from FY 2023 to FY 2024 is due to the timing of CSO-related debt payments.

4.7. WAD Rate and Groundwater Fee

Raftelis updated DC Water’s Washington Aqueduct Rate (WAD Rate) and Groundwater Fee for the test years. The WAD Rate was established in 2021 to recover the cost of treating low-strength, high-volume effluent from the Washington Aqueduct. A separate report submitted to DC Water on June 25, 2021 outlines the justification and approach for the WAD Rate calculation methodology. The Groundwater Fee, last updated in FY 2018, was updated according to the previously established methodology used in 2018. Table 20 outlines these fees for the two test years. Going forward, both the WAD Rate and the Groundwater Fee will be updated as part of the biannual COS Study as both are approved through the same retail rate setting process.

Table 20: WAD Rate and Groundwater Fee

FY 2023	WAD Rate	Groundwater Fee
Revenue Requirements	\$142,951,392	\$152,385,745
Offset Deduction	\$(48,884,113)	\$(52,110,314)
Net Revenue Requirements	\$94,067,279	\$100,275,431
Sewer Flow (Ccf)	29,279,333	29,279,333
<i>Rate</i>	\$3.21	\$3.42

FY 2024	WAD Rate	Groundwater Fee
Revenue Requirements	\$147,686,980	\$156,789,757
Offset Deduction	\$(52,055,240)	\$(55,263,696)
Net Revenue Requirements	\$95,631,740	\$101,526,061
Sewer Flow (Ccf)	28,971,416	28,971,416
<i>Rate</i>	\$3.30	\$3.50

4.8. COS / Rate Equity Conclusions

The results of the COS analysis support several conclusions and/or recommendations for consideration by DC Water staff and the Board, which are summarized below.

- Overall bill increases for FY 2023 are driven primarily by volumetric rates for water and sewer. Bill increases for FY 2024 are primarily due to increased CRIAC borrowing as volumetric rate increases moderate.
- The cost of service suggests that DC Water should increase its water and sewer rates year over year, as compared to existing FY 2022 rates to fully recover costs and meet financial policy targets.
- The calculated water and sewer rates are designed to generate revenues consistent with projected revenues in the Financial Plan in FY 2023 and FY 2024.
- The Metering Fee and WSRF will remain constant during the test year period.
- The PILOT District Charge on the DC Water bill is increasing during the test year period.
- Average customer usage remains at 5.42 Ccf/month, as it was for the previous COS study.

In general, the existing rate structure provides for a reasonable allocation of cost recovery to utility customers. Raftelis recommends no additional rate structure changes at this time.

5. Proposed Rates and Impacts

Through our COS analysis, Raftelis calculated proposed rates for FY 2023 and FY 2024, along with corresponding customer impacts. Table 21 presents the existing and proposed rates, along with the increases presented with both percentages and dollars. Table 22 and Table 23 present the customer impacts for a typical Residential customer and a typical Residential CAP customer, respectively, associated with the proposed FY 2023 and FY 2024 rates.

Table 21: Existing and Proposed Rates

	FY 2022 (Existing)	FY 2023 (Proposed)	FY 2024 (Proposed)	FY 2023		FY 2024	
				\$ Difference	% Difference	\$ Difference	% Difference
Water Volumetric Residential – Tier 1	\$3.63	\$4.28	\$4.38	\$0.65	17.9%	\$0.10	2.3%
Water Volumetric Residential – Tier 2	\$4.74	\$5.58	\$5.70	\$0.84	17.7%	\$0.12	2.2%
Water Volumetric – Multi-family	\$4.15	\$4.90	\$5.00	\$0.75	18.1%	\$0.10	2.0%
Water Volumetric – Non-Residential	\$4.91	\$5.78	\$5.89	\$0.87	17.7%	\$0.11	1.9%
Sewer Volumetric	\$10.64	\$11.26	\$11.70	\$0.62	5.8%	\$0.44	3.9%
Metering Fee	\$7.75	\$7.75	\$7.75	\$ -	0%	\$ -	0%
Clean Rivers IAC	\$18.40	\$18.14	\$21.86	\$(0.26)	-1.4%	\$3.72	20.5%
WSRF	\$6.30	\$6.30	\$6.30	\$ -	0%	\$ -	0%
WAD Rate	\$3.03	\$3.21	\$3.30	\$0.18	5.9%	\$0.09	2.8%
Groundwater Fee	\$2.83 ¹	\$3.42	\$3.50	\$0.59	20.8%	\$0.08	2.3%

1. The Groundwater Fee currently in effect was originally calculated in 2018, so the 20.8% increase in the proposed fee for FY 2023 reflects increases in costs since 2018.

The tables below show the typical customer’s bill under existing and proposed rates. The typical bill is based on a 5/8” meter and 1 ERU of impervious area. As was the case in the previous COS study completed in 2020, the average customer usage is 5.42 Ccf/month.

Table 22: Residential Customer Monthly Bill Impacts

	Current		Calculated		FY 2023		FY 2024	
	(FY 2022)	(FY 2023)	(FY 2023)	(FY 2024)	\$ Change	% Change	\$ Change	% Change
DC Water and Sewer Retail Rates	\$ 78.92	\$ 86.07	\$ 86.07	\$ 89.03	\$ 7.15	9.1%	\$ 2.96	3.4%
DC Water Clean Rivers IAC	18.40	18.14	18.14	21.86	(0.26)	-1.4%	3.72	20.5%
DC Water Customer Metering Fee	7.75	7.75	7.75	7.75	-	0.0%	-	0.0%
DC Water Water System Replacement Fee	6.30	6.30	6.30	6.30	-	0.0%	-	0.0%
Subtotal: DC Water Rates & Charges	\$ 111.37	\$ 118.26	\$ 118.26	\$ 124.94	\$ 6.89	6.2%	\$ 6.68	5.6%
District of Columbia PILOT	\$ 3.04	\$ 3.20	\$ 3.20	\$ 3.31	\$ 0.16	5.3%	0.11	3.4%
District of Columbia Right of Way Fee	1.03	1.03	1.03	1.03	-	0.0%	-	0.0%
District of Columbia Stormwater Fee	2.67	2.67	2.67	2.67	-	0.0%	-	0.0%
Subtotal District of Columbia Charges	\$ 6.74	\$ 6.90	\$ 6.90	\$ 7.01	\$ 0.16	2.4%	\$ 0.11	1.6%
Total Amount Appearing on DC Water Bill	\$ 118.11	\$ 125.16	\$ 125.16	\$ 131.95	\$ 7.05	6.0%	\$ 6.79	5.4%

Customers who qualify for DC Water’s Customer Assistance Program (CAP) receive a discount on their bill, as shown below. CAP customers receive their first 4 Ccf of monthly water and sewer usage free, and the District PILOT and ROW charges associated with the first 4 Ccf of usage are also waived. CAP customers do not pay the Water System Replacement Fee. In addition, CAP customers pay a reduced CRIAC each month. Beginning in FY 2021, DC Water increased the CRIAC discount from 50% to 75%.

Table 23: Residential CAP Customer Monthly Bill Impacts

	Current		Calculated		FY 2023		FY 2024	
	(FY 2022)	(FY 2023)	(FY 2023)	(FY 2024)	\$ Change	% Change	\$ Change	% Change
DC Water and Sewer Retail Rates	\$ 78.92	\$ 86.07	\$ 86.07	\$ 89.03	\$ 7.15	9.1%	\$ 2.96	3.4%
DC Water Clean Rivers IAC	18.40	18.14	18.14	21.86	(0.26)	-1.4%	3.72	20.5%
DC Water Customer Metering Fee	7.75	7.75	7.75	7.75	-	0.0%	-	0.0%
DC Water Water System Replacement Fee	6.30	6.30	6.30	6.30	-	0.0%	-	0.0%
Subtotal: DC Water Rates & Charges	\$ 111.37	\$ 118.26	\$ 118.26	\$ 124.94	\$ 6.89	6.2%	\$ 6.68	5.6%
District of Columbia PILOT	\$ 3.04	\$ 3.20	\$ 3.20	\$ 3.31	\$ 0.16	5.3%	\$ 0.11	3.4%
District of Columbia Right of Way Fee	1.03	1.03	1.03	1.03	-	0.0%	-	0.0%
District of Columbia Stormwater Fee	2.67	2.67	2.67	2.67	-	0.0%	-	0.0%
Subtotal District of Columbia Charges	\$ 6.74	\$ 6.90	\$ 6.90	\$ 7.01	\$ 0.16	2.4%	\$ 0.11	1.6%
Less: CAP Discount - 4 Ccf per Month	\$ (60.08)	\$ (65.28)	\$ (65.28)	\$ (67.52)	\$ (5.20)	8.7%	\$ (2.24)	3.4%
Less: CAP Discount - % of CRIAC	(13.80)	(13.61)	(13.61)	(16.40)	0.19	-1.4%	(2.79)	20.5%
Less: CAP Discount - WSRF	(6.30)	(6.30)	(6.30)	(6.30)	-	-	-	0.0%
Subtotal: CAP Discount	\$ (80.18)	\$ (85.19)	\$ (85.19)	\$ (90.22)	\$ (5.01)	6.2%	\$ (5.03)	5.9%
CAP Discount Percentage	67.9%	68.1%	68.1%	68.4%				
Total Amount Appearing on DC Water Bill with CAP Discount	\$ 37.93	\$ 39.97	\$ 39.97	\$ 41.73	\$ 2.04	5.4%	\$ 1.76	4.4%

APPENDIX:
Supporting Schedules

**DC Water
Comparison vs. Financial Plan**

	Financial Plan 2023	Raftelis Model 2023	Delta 2023
OPERATING REVENUE:			
Residential & Commercial	\$ 396,574,848	\$ 394,811,273	\$ (1,763,574)
D. C. Government	13,359,360	13,346,641	(12,719)
Federal Government	66,329,962	66,329,962	-
D. C. Housing Authority	12,459,360	12,323,700	(135,660)
Groundwater	5,000	5,000	-
Metering Fee	24,082,852	23,361,672	(721,180)
Water System Replacement Fee (WSRF)	39,717,000	39,717,000	-
Right-of-Way Fee / PILOT	23,070,220	23,070,220	-
CRIAC CSO Revenue	91,425,600	91,425,600	-
Total Retail Revenue	<u>\$ 667,024,202</u>	<u>\$ 664,391,069</u>	<u>\$ (2,633,133)</u> <i>-0.39%</i>
WHOLESALE REVENUE:			
LCSA + PI	\$ 10,955,826	\$ 10,955,826	-
WSSC	60,599,013	60,599,013	-
Fairfax County	14,165,231	14,165,231	-
Total Wholesale Revenue	<u>\$ 85,720,070</u>	<u>\$ 85,720,070</u>	<u>\$ -</u>
TOTAL OPERATING REVENUE	<u>\$ 752,744,272</u>	<u>\$ 750,111,139</u>	<u>\$ (2,633,133)</u> <i>-0.35%</i>
NON-OPERATING REVENUE:			
Interest Earnings	\$ 4,386,863	\$ 4,386,863	\$ -
Other Revenue	42,668,400	42,668,400	-
Northern Virginia Debt Service	193,246	193,246	-
Total Non-Operating Revenue	<u>\$ 47,248,509</u>	<u>\$ 47,248,509</u>	<u>\$ -</u>
TOTAL REVENUE	<u>\$ 799,992,781</u>	<u>\$ 797,359,648</u>	<u>\$ (2,633,133)</u> <i>-0.33%</i>
OPERATING EXPENSE:			
Personnel Services	\$ 155,787,994	\$ 155,787,993	\$ (1)
Contractual Services	88,504,269	88,504,269	0
Water Purchases	40,334,030	40,334,030	-
Chemicals & Supplies	36,993,885	36,993,885	0
Utilities & Rent	28,798,903	28,798,903	0
Small Equipment	1,107,950	1,107,950	-
Payment in Lieu of Taxes / Right of Way Fee	23,070,220	23,070,220	-
Total Operating Expenditures	<u>\$ 374,597,251</u>	<u>\$ 374,597,251</u>	<u>\$ 0</u> <i>0.00%</i>
NET REVENUES	<u>\$ 425,395,530</u>	<u>\$ 422,762,396</u>	<u>\$ (2,633,133)</u>
DEBT SERVICE:			
Jennings Randolph	\$ 805,192	\$ 805,191	\$ (1)
1998 Revenue Bonds	23,369,450	23,369,450	-
Series 2014A	16,849,000	16,849,000	-
Series 2017A&B	17,848,250	17,848,250	-
Series 2018A&B	18,328,500	18,328,500	-
WIFIA Loan	-	-	-
WASA Bonds - Planned - Senior	5,099,084	5,146,598	47,514
WASA Bonds - Planned - Subordinate	21,752,393	21,752,393	-
Capital Equipment Financing	-	-	-
Series 2010A Subordinate Bond	15,460,301	15,460,301	0
Series 2012A,B-1,B-2,C Subordinate Bond	-	-	-
Series 2014B Subordinate Bond	2,500,000	2,500,000	(0)
Series 2014C Subordinate Bond	30,006,450	30,006,450	-
Series 2015A&B Subordinate Bond	24,732,263	24,732,263	(1)
Series 2016A Subordinate Bond	17,039,013	17,039,013	-
Series 2019A Subordinate Bond	4,708,700	4,708,700	-
Series 2019B Subordinate Bond	2,916,000	2,916,000	-
Series 2019C Subordinate Bond	1,741,338	1,741,338	-
Series 2019D Subordinate Bond	12,305,218	12,305,218	-
Series 2022A Subordinate Bond	16,218,168	16,218,168	(0)
EMCP	2,632,175	2,632,175	-
Commercial Paper	2,822,050	2,822,050	-
Total Debt	<u>\$ 237,133,544</u>	<u>\$ 237,181,056</u>	<u>\$ 47,512</u> <i>0.02%</i>
Cash Financed Capital Improvements	\$ 46,691,694	\$ 46,691,694	\$ -
Debt + Cash	<u>\$ 283,825,238</u>	<u>\$ 283,872,750</u>	<u>\$ 47,512</u>
TOTAL DISBURSEMENTS	<u>\$ 658,422,489</u>	<u>\$ 658,470,002</u>	<u>\$ 47,513</u> <i>0.01%</i>
Total Surplus (Deficit)	<u>\$ 141,570,292</u>	<u>\$ 138,889,646</u>	<u>\$ (2,680,645)</u> <i>-1.9%</i>

**DC Water
Comparison vs. Financial Plan**

	Financial Plan	Raftelis Model	Delta
	2024	2024	2024
OPERATING REVENUE:			
Residential & Commercial	\$ 405,686,419	\$ 403,556,855	\$ (2,129,564)
D. C. Government	13,649,840	13,636,625	(13,215)
Federal Government	59,891,124	59,378,104	(513,020)
D. C. Housing Authority	12,742,100	12,601,147	(140,953)
Groundwater	5,000	5,000	-
Metering Fee	24,082,852	23,361,672	(721,180)
Water System Replacement Fee (WSRF)	39,717,000	39,717,000	-
Right-of-Way Fee / PILOT	23,429,624	23,429,624	-
CRIAC CSO Revenue	110,174,400	110,174,400	-
Total Retail Revenue	<u>\$ 689,378,359</u>	<u>\$ 685,860,428</u>	<u>\$ (3,517,931)</u>
			<i>-0.51%</i>
WHOLESALE REVENUE:			
LCSA + PI	\$ 11,271,129	\$ 11,271,129	-
WSSC	63,108,918	63,108,918	-
Fairfax County	14,762,192	14,762,192	-
Total Wholesale Revenue	<u>\$ 89,142,239</u>	<u>\$ 89,142,239</u>	<u>\$ -</u>
TOTAL OPERATING REVENUE			
	<u>\$ 778,520,598</u>	<u>\$ 775,002,667</u>	<u>\$ (3,517,931)</u>
			<i>-0.45%</i>
NON-OPERATING REVENUE:			
Interest Earnings	\$ 4,427,383	\$ 4,427,383	\$ -
Other Revenue	44,563,400	44,563,400	-
Northern Virginia Debt Service	193,246	193,246	-
Total Non-Operating Revenue	<u>\$ 49,184,029</u>	<u>\$ 49,184,029</u>	<u>\$ -</u>
TOTAL REVENUE			
	<u>\$ 827,704,627</u>	<u>\$ 824,186,696</u>	<u>\$ (3,517,931)</u>
			<i>-0.43%</i>
OPERATING EXPENSE:			
Personnel Services	\$ 160,468,581	\$ 160,468,582	\$ 1
Contractual Services	91,258,703	91,258,703	0
Water Purchases	41,544,051	41,544,051	(0)
Chemicals & Supplies	38,305,358	38,305,357	(1)
Utilities & Rent	29,946,481	29,946,481	0
Small Equipment	1,141,189	1,141,189	(1)
Payment in Lieu of Taxes / Right of Way Fee	23,429,624	23,429,624	-
Total Operating Expenditures	<u>\$ 386,093,987</u>	<u>\$ 386,093,987</u>	<u>\$ 0</u>
			<i>0.00%</i>
NET REVENUES			
	<u>\$ 441,610,640</u>	<u>\$ 438,092,709</u>	<u>\$ (3,517,931)</u>
DEBT SERVICE:			
Jennings Randolph	\$ 805,191	\$ 805,191	\$ 0
1998 Revenue Bonds	8,110,475	8,110,475	-
Series 2014A	16,849,000	16,849,000	-
Series 2017A&B	17,849,000	17,849,000	-
Series 2018A&B	18,326,250	18,326,250	-
WIFIA Loan	-	-	-
WASA Bonds - Planned - Senior	10,198,168	10,293,195	95,027
WASA Bonds - Planned - Subordinate	30,987,271	31,048,360	61,089
Capital Equipment Financing	-	-	-
Series 2010A Subordinate Bond	15,432,289	15,432,289	(0)
Series 2012A,B-1,B-2,C Subordinate Bond	-	-	-
Series 2014B Subordinate Bond	3,252,992	3,252,992	0
Series 2014C Subordinate Bond	20,287,700	20,287,700	-
Series 2015A&B Subordinate Bond	24,731,013	24,731,013	-
Series 2016A Subordinate Bond	17,039,013	17,039,013	-
Series 2019A Subordinate Bond	4,708,700	4,708,700	-
Series 2019B Subordinate Bond	2,916,000	2,916,000	-
Series 2019C Subordinate Bond	1,741,338	1,741,338	-
Series 2019D Subordinate Bond	12,305,247	12,305,247	-
Series 2022A Subordinate Bond	36,942,512	36,942,512	(0)
EMCP	2,633,375	2,633,375	-
Commercial Paper	2,821,463	2,821,463	-
Total Debt	<u>\$ 247,936,995</u>	<u>\$ 248,093,112</u>	<u>\$ 156,117</u>
		<i>Check</i>	<i>0.06%</i>
Cash Financed Capital Improvements	\$ 48,256,485	\$ 48,256,485	\$ -
Debt + Cash	\$ 296,193,480	\$ 296,349,597	\$ 156,117
TOTAL DISBURSEMENTS			
	<u>\$ 682,287,467</u>	<u>\$ 682,443,584</u>	<u>\$ 156,117</u>
			<i>0.02%</i>
Total Surplus (Deficit)	\$ 145,417,159	\$ 141,743,112	\$ (3,674,047)
			<i>-3%</i>

DC Water
Revenue Requirements FY 2023

Test Year 1:															
	Volume	Meter Charge	Wastewater	CSO	2023	Water	Meter Charge	Wastewater	CSO	% Check	Groundwater	Low Strength			
Operations															
Wastewater Treatment - Operations			100.00%		\$ 80,242,172	\$ -	\$ -	\$ 80,242,172	\$ -	-	64%	\$51,518,179	64%	\$51,518,179	Direct
Wastewater Treatment - Process Engineering			100.00%		6,978,440	-	-	6,978,440	-	-	64%	\$4,480,393	64%	\$4,480,393	Direct
Maintenance Services	7.00%		93.00%		20,497,034	1,434,792	-	19,062,242	-	-	38%	\$7,215,636	38%	\$7,215,636	Direct
Water Operations	100.00%				72,195,028	72,195,028	-	-	-	-	-	-	-	-	-
Sewer Operations			100.00%		15,681,574	-	-	15,681,574	-	-	100%	\$15,681,574	100%	\$15,681,574	Direct
Customer Care	18.00%	46.00%	36.00%		21,079,812	3,794,366	9,696,713	7,588,732	-	-	38%	\$2,872,565	38%	\$2,872,565	Indirect
Pumping Operations	20.00%		80.00%		21,667,589	4,333,518	-	17,334,071	-	-	100%	\$17,334,071	100%	\$17,334,071	Direct
Engineering & Technical Services	7.00%		93.00%		23,336,304	1,633,541	-	21,702,763	-	-	38%	\$8,215,154	38%	\$8,215,154	Indirect
WasteWater Engineering			100.00%		3,432,037	-	-	3,432,037	-	-	38%	\$1,299,130	38%	\$1,299,130	Indirect
D.C. Clean Rivers					4,118,082	-	-	1,935,254	2,182,828	-	-	-	-	-	-
CIP Infrastructure Management	52.09%	0.84%	47.08%		5,034,065	2,622,123	42,115	2,369,828	-	-	38%	\$897,052	38%	\$897,052	Indirect
Permit Operations	50.00%		50.00%		4,427,766	2,213,883	-	2,213,883	-	-	38%	\$838,022	38%	\$838,022	Indirect
<i>Subtotal Operations</i>					\$ 278,689,904	\$ 88,227,252	\$ 9,738,828	\$ 178,540,996	\$ 2,182,828						
Administration															
Office of the Chief Executive Officer	45.00%		55.00%		\$ 2,772,267	\$ 1,247,520	\$ -	\$ 1,524,747	\$ -	-	38%	\$577,163	38%	\$577,163	Overhead
Office of the Chief Operating Officer	45.00%		55.00%		1,432,379	644,571	-	787,809	-	-	38%	\$298,209	38%	\$298,209	Overhead
Office of the Secretary	45.00%		55.00%		635,236	285,856	-	349,380	-	-	38%	\$132,251	38%	\$132,251	Overhead
Internal Audit (outsourced)	45.00%		55.00%		744,837	335,177	-	409,660	-	-	38%	\$155,069	38%	\$155,069	Overhead
Legal Affairs	45.00%		55.00%		8,351,049	3,757,972	-	4,593,077	-	-	38%	\$1,738,619	38%	\$1,738,619	Overhead
Marketing and Communications	45.00%		55.00%		3,243,426	1,459,542	-	1,783,884	-	-	38%	\$675,254	38%	\$675,254	Overhead
Performance	45.00%		55.00%		2,855,616	1,285,027	-	1,570,589	-	-	38%	\$594,516	38%	\$594,516	Overhead
Human Resources	45.00%		55.00%		9,927,621	4,467,429	-	5,460,191	-	-	38%	\$2,066,848	38%	\$2,066,848	Overhead
Information Technology	45.00%		55.00%		10,252,414	4,613,586	-	5,638,828	-	-	38%	\$2,134,467	38%	\$2,134,467	Overhead
Procurement and Compliance	45.00%		55.00%		7,420,658	3,339,296	-	4,081,362	-	-	38%	\$1,544,919	38%	\$1,544,919	Overhead
Finance	45.00%		55.00%		24,592,101	11,066,446	-	13,525,656	-	-	38%	\$5,119,871	38%	\$5,119,871	Overhead
Non-Ratepayer Revenue Fund	45.00%		55.00%		1,000,000	450,000	-	550,000	-	-	38%	\$208,192	38%	\$208,192	Overhead
Administrative Office	45.00%		55.00%		753,551	339,098	-	414,453	-	-	38%	\$156,883	38%	\$156,883	Overhead
Office of Emergency Management	45.00%		55.00%		1,668,965	751,034	-	917,931	-	-	38%	\$347,465	38%	\$347,465	Overhead
Facilities Management	45.00%		55.00%		9,780,657	4,401,296	-	5,379,361	-	-	38%	\$2,036,251	38%	\$2,036,251	Overhead
Security	45.00%		55.00%		8,651,277	3,893,075	-	4,758,202	-	-	38%	\$1,801,124	38%	\$1,801,124	Overhead
Occupational Safety and Health	45.00%		55.00%		1,613,907	726,258	-	887,649	-	-	38%	\$336,002	38%	\$336,002	Overhead
Fleet Management	45.00%		55.00%		7,576,065	3,409,229	-	4,166,836	-	-	38%	\$1,577,274	38%	\$1,577,274	Overhead
<i>Subtotal Administration</i>					\$ 103,272,028	\$ 46,472,413	\$ -	\$ 56,799,615	\$ -						
Total O&M															
					\$ 381,961,932	\$ 134,699,664	\$ 9,738,828	\$ 235,340,611	\$ 2,182,828						
Debt Service															
1998 Revenue Bonds	16.23%	8.19%	72.88%	2.70%	\$ 23,369,450	\$ 3,791,937	\$ 1,913,955	\$ 17,032,582	\$ 630,975	-	-	-	-	-	-
Series 2014A			100.00%		16,849,000	-	-	-	16,849,000	-	-	-	-	-	-
Series 2017A			100.00%		4,591,000	-	-	-	4,591,000	-	-	-	-	-	-
Series 2017B	35.44%	4.55%	60.01%		13,257,250	4,698,317	602,802	7,956,131	-	-	-	-	-	-	-
Series 2018A			100.00%		5,000,000	-	-	-	5,000,000	-	-	-	-	-	-
Series 2018B	29.18%	6.13%	64.69%		13,328,500	3,889,041	817,135	8,622,324	-	-	-	-	-	-	-
WIFLA Loan	44.21%		55.79%		-	-	-	-	-	-	-	-	-	-	-
DC Water Bonds Planned	27.02%	0.54%	30.97%	41.47%	26,898,991	7,267,532	145,586	8,330,980	11,154,893	-	-	-	-	-	-
Jennings Randolph	100.00%				805,191	805,191	-	-	-	-	-	-	-	-	-
Commercial Paper	20.22%	2.13%	5.75%	71.90%	2,822,050	570,611	60,100	162,286	2,029,054	-	-	-	-	-	-
Series 2010A Subordinate Bond	16.08%	0.84%	21.16%	61.92%	15,460,301	2,486,016	129,867	3,271,400	9,573,019	-	-	-	-	-	-
Series 2014B Subordinate Bond	25.63%	0.66%	73.71%		2,500,000	640,762	16,463	1,842,775	-	-	-	-	-	-	-
Series 2014C Subordinate Bond	29.76%	0.54%	48.42%	21.29%	30,006,450	8,928,821	161,621	14,528,897	6,387,111	-	-	-	-	-	-
Series 2015A Subordinate Bond			100.00%		11,925,900	-	-	-	11,925,900	-	-	-	-	-	-
Series 2015B Subordinate Bond	44.40%	2.87%	52.73%		12,806,363	5,686,341	367,507	6,752,514	-	-	-	-	-	-	-
Series 2016A Subordinate Bond	38.91%	0.74%	47.86%	12.49%	17,039,013	6,629,884	125,382	8,155,157	2,128,589	-	-	-	-	-	-
Series 2019A Subordinate Bond			100.00%		4,708,700	-	-	-	4,708,700	-	-	-	-	-	-
Series 2019B Subordinate Bond	52.09%	0.84%	47.08%		2,916,000	1,518,874	24,395	1,372,731	-	-	-	-	-	-	-
Series 2019C Subordinate Bond	17.62%	2.39%	46.29%	33.70%	1,741,338	306,900	41,597	806,010	586,831	-	-	-	-	-	-
Series 2019D Subordinate Bond	52.09%	0.84%	47.08%		12,305,218	6,409,490	102,945	5,792,783	-	-	-	-	-	-	-
Series 2022A Subordinate Bond	11.15%	0.52%	14.60%	73.73%	16,218,168	1,808,326	84,334	2,367,852	11,957,655	-	-	-	-	-	-
EMCP	45.71%		54.29%		2,632,175	1,203,282	-	1,428,893	-	-	-	-	-	-	-
Capital Equipment Financing	17.44%	2.82%	28.94%	50.80%	-	-	-	-	-	-	-	-	-	-	-
Financial Policy Contingency pro forma adj.	20.00%	0.00%	80.00%	0.00%	2,500,000	500,000	-	2,000,000	-	-	-	-	-	-	-
Coverage Allowance					142,308,634	33,984,795	2,756,213	53,053,990	52,513,636						
<i>Subtotal Debt Service</i>					\$ 142,308,634	\$ 33,984,795	\$ 2,756,213	\$ 53,053,990	\$ 52,513,636						
Total Debt															
					\$ 237,181,056	\$ 56,641,324	\$ 4,593,688	\$ 88,423,317	\$ 87,522,727		23%	\$20,533,592	23%	\$20,533,592	
					-	23.9%	1.9%	37.3%	36.9%		47%	\$152,385,745	47%	\$152,385,745	
Total Capital Cost															
					\$ 381,989,690	\$ 91,126,119	\$ 7,349,901	\$ 143,477,307	\$ 140,036,363						

	Volume	Meter Charge	Wastewater	CSO	2023	Water	Meter Charge	Wastewater	CSO
	Volume	Meter	Wastewater	CSO					
Wholesale Revenue									
LCSA + PI			100.00%	0.00%	\$ (10,955,826)	\$ -	\$ -	\$ (10,955,826)	\$ -
WSSC			100.00%	0.00%	(60,599,013)	-	-	(60,599,013)	-
Fairfax County			100.00%	0.00%	(14,165,231)	-	-	(14,165,231)	-
Other Revenue									
IMA Indirect Cost Reimb. For Capital Projects			100.00%		(5,934,000)	-	-	(5,934,000)	-
Dev. Contr/Water Services Fees, Taps	100.00%				(4,000,000)	(4,000,000)	-	-	-
Dev. Contr/Liability Deposits/Sewer Service Fees			100.00%		(2,000,000)	-	-	(2,000,000)	-
Funding for Non-Ratepayer Revenue Fund	50.00%		50.00%		(1,000,000)	(500,000)	-	(500,000)	-
Commercial Water Maintenance	100.00%				(32,000)	(32,000)	-	-	-
DC Fire Protection Fee	100.00%				(11,535,000)	(11,535,000)	-	-	-
System Availability Fee	50.00%		50.00%		(7,700,000)	(3,850,000)	-	(3,850,000)	-
Washington Aqueduct's Backwash- DCW's prorata share			100.00%		(3,275,400)	-	-	(3,275,400)	-
Transfer from DC PILOT/ROW Fund	32.55%		67.45%		-	-	-	-	-
DC Contribution of 50% PILOT Escrow to DCW	32.55%		67.45%		-	-	-	-	-
Sales to DC Agencies-Steam/Meter	100.00%				(170,000)	(170,000)	-	-	-
Misc. Rev: Bid Deposits, Fleet Auction, Compost Sales			100.00%		(6,000,000)	-	-	(6,000,000)	-
Pipe Repair Sales/Replacement	100.00%				(22,000)	(22,000)	-	-	-
Stormwater			100.00%		(1,000,000)	-	-	(1,000,000)	-
Northern Virginia Debt Service	24.00%		76.00%		(193,246)	(46,379)	-	(146,867)	-
WSRF	100.00%				(39,717,000)	(39,717,000)	-	-	-
Interest Income	45.00%		55.00%		(4,161,829)	(1,872,823)	-	(2,289,006)	-
Total Revenue Offsets					\$ (172,460,545)	\$ (61,745,202)	\$ -	\$ (110,715,343)	\$ -
Unadjusted Revenue Requirement					\$ 591,491,077	\$ 164,080,581	\$ 17,088,729	\$ 268,102,576	\$ 142,219,191
<u>CRIAC Adjustments</u>									
Remove Capitalized O&M from CRIAC Calc.									\$ (2,182,828)
Adjusted CRIAC Total - Before Re-allocation to Sewer									\$ 140,036,363
Percent Reallocation from CRIAC to Sewer									37.00%
Reallocation from CRIAC to Sewer								51,813,454	(51,813,454)
Reallocated CRIAC Revenue Requirements									88,222,909
CRIAC Rev. Req. Plus 500,000 CAP									88,722,909
Revenue Requirement for Rate Calculations					\$ 589,808,249	\$ 164,080,581	\$ 17,088,729	\$ 319,916,030	\$ 88,722,909
<u>Water and Meter Fee Adjustments</u>									
Reallocation from Water to Meter						(6,414,410)	\$ 6,414,410		
Adjusted Water and Meter Revenue Requirements						\$ 157,666,171	\$ 23,503,139		
Adjusted Revenue Requirements + Delinquency					\$ 607,502,497	\$ 162,396,157	\$ 24,208,233	\$ 329,513,511	\$ 91,384,596

DC Water
Allocation of Water Costs

Test Year 1: Amount Allocated to Water	Source of Supply & Treatment	Distribution	Storage	Pumping	Customer Service/Meter	Admin/General
Operations						
Maintenance Services	\$ 1,434,792	\$ -	\$ 1,115,764	\$ 140,837	\$ 178,191	\$ -
Water Operations	72,195,028	-	56,142,356	7,086,545	8,966,128	-
Sewer Operations	-	-	-	-	-	-
Customer Care	3,794,366	-	-	-	955,420	2,838,947
Pumping Operations	4,333,518	3,640,568	538,872	68,019	86,060	-
Engineering & Technical Services	1,633,541	-	1,270,321	160,346	202,875	-
WasteWater Engineering	-	-	-	-	-	-
D.C. Clean Rivers	-	-	-	-	-	-
CIP Infrastructure Management	2,622,123	-	2,039,090	257,383	325,650	-
Permit Operations	2,213,883	2,213,883	-	-	-	-
\$ 88,227,252	\$ 5,854,451	\$ 61,106,402	\$ 7,713,129	\$ 9,758,904	\$ 955,420	\$ 2,838,947
Administration						
Office of the Chief Executive Officer	\$ 1,247,520	\$ -	\$ -	\$ -	\$ -	\$ 1,247,520
Office of the Chief Operating Officer	644,571	-	-	-	-	644,571
Office of the Secretary	285,856	-	-	-	-	285,856
Internal Audit (outsourced)	335,177	-	-	-	-	335,177
Legal Affairs	3,757,972	-	-	-	-	3,757,972
Marketing and Communications	1,459,542	-	-	-	-	1,459,542
Performance	1,285,027	-	-	-	-	1,285,027
Human Resources	4,467,429	-	-	-	-	4,467,429
Information Technology	4,613,586	-	-	-	-	4,613,586
Procurement and Compliance	3,339,296	-	-	-	-	3,339,296
Finance	11,066,446	-	-	-	-	11,066,446
Non-Ratepayer Revenue Fund	450,000	-	-	-	-	450,000
Administrative Office	339,098	-	-	-	-	339,098
Office of Emergency Management	751,034	-	-	-	-	751,034
Facilities Management	4,401,296	-	-	-	-	4,401,296
Security	3,893,075	-	-	-	-	3,893,075
Occupational Safety and Health	726,258	-	-	-	-	726,258
Fleet Management	3,409,229	-	-	-	-	3,409,229
\$ 46,472,413	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 46,472,413
Total Water O&M	\$ 134,699,664	\$ 5,854,451	\$ 61,106,402	\$ 7,713,129	\$ 9,758,904	\$ 955,420
	-	4.3%	45.4%	5.7%	7.2%	0.7%
Debt Service (1)						
1998 Revenue Bonds	\$ 3,791,937	\$ 817,507	\$ 2,210,298	\$ -	\$ -	\$ 764,132
Series 2014A	-	-	-	-	-	-
Series 2017A	-	-	-	-	-	-
Series 2017B	4,698,317	1,478,889	2,842,422	-	-	377,006
Series 2018A	-	-	-	-	-	-
Series 2018B	3,889,041	1,269,716	2,478,407	-	-	140,918
WiFi Loan	-	-	-	-	-	-
DC Water Bonds Planned	7,267,532	1,918,486	5,187,019	-	-	162,027
Jennings Randolph	805,191	805,191	-	-	-	-
Commercial Paper	570,611	152,071	411,154	-	-	7,387
Series 2010A Subordinate Bond	2,486,016	661,018	1,787,196	-	-	37,802
Series 2014B Subordinate Bond	640,762	126,230	499,794	-	-	14,738
Series 2014C Subordinate Bond	8,928,821	1,758,978	6,964,480	-	-	205,363
Series 2015A Subordinate Bond	-	-	-	-	-	-
Series 2015B Subordinate Bond	5,686,341	1,789,890	3,440,164	-	-	456,288
Series 2016A Subordinate Bond	6,629,884	2,164,561	4,225,091	-	-	240,231
Series 2019A Subordinate Bond	-	-	-	-	-	-
Series 2019B Subordinate Bond	1,518,874	337,262	1,011,786	-	-	169,826
Series 2019C Subordinate Bond	306,900	68,146	204,439	-	-	34,315
Series 2019D Subordinate Bond	6,409,490	1,423,211	4,269,633	-	-	716,646
Series 2022A Subordinate Bond	1,808,326	356,240	1,410,494	-	-	41,591
EMCP	1,203,282	392,854	766,827	-	-	43,600
Capital Equipment Financing	-	-	-	-	-	-
Financial Policy Contingency pro forma adj.	500,000	-	-	-	-	500,000
Total Water Debt	\$ 57,141,324	\$ 15,520,251	\$ 37,709,205	\$ -	\$ -	\$ 3,411,869
	-	27.2%	66.0%	0.0%	0.0%	6.0%
Revenue Offsets						
Wholesale Revenue						
LCSA + PI	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WSSC	-	-	-	-	-	-
Fairfax County	-	-	-	-	-	-
Other Revenue						
IMA Indirect Cost Reimb. For Capital Projects	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Dev. Contr./Water Services Fees, Taps	(4,000,000)	-	(4,000,000)	-	-	-
Dev. Contr./Liability Deposits/Sewer Service Fees	-	-	-	-	-	-
Funding for Non-Ratepayer Revenue Fund	(500,000)	-	-	-	-	(500,000)
Commercial Water Maintenance	(32,000)	-	(32,000)	-	-	-
DC Fire Protection Fee	(11,535,000)	(5,767,500)	(5,767,500)	-	-	-
System Availability Fee	(3,850,000)	-	-	-	-	(3,850,000)
Washington Aqueduct's Backwash- DCW's prorata share	-	-	-	-	-	-
Transfer from DC PILOT/ROW Fund	-	-	-	-	-	-
DC Contribution of 50% PILOT Escrow to DCW	-	-	-	-	-	-
Sales to DC Agencies-Steam/Meter	(170,000)	-	(170,000)	-	-	-
Misc. Rev: Bid Deposits, Fleet Auction, Compost Sales	-	-	-	-	-	-
Pipe Repair Sales/Replacement	(22,000)	-	-	-	-	(22,000)
Stormwater	-	-	-	-	-	-
Northern Virginia Debt Service	(46,379)	-	-	-	-	(46,379)
WSRF	(39,717,000)	-	-	-	-	(39,717,000)
Interest Income	(1,872,823)	(618,032)	(618,032)	-	-	(636,760)
Total Water Revenue Offsets	\$ (61,745,202)	\$ (6,385,532)	\$ (10,587,532)	\$ -	\$ -	\$ (44,772,139)
Unadjusted Net Water Revenue Requirements	\$ 130,095,787	\$ 14,989,170	\$ 88,228,075	\$ 7,713,129	\$ 9,758,904	\$ 4,367,289
	-	11.5%	67.8%	5.9%	7.5%	3.4%
Adjustment for DS Coverage	\$ 33,984,795	\$ 9,312,150	\$ 22,625,523	\$ -	\$ -	\$ 2,047,121
Adjusted Net Water Revenue Requirements	\$ 164,080,581	\$ 24,301,321	\$ 110,853,598	\$ 7,713,129	\$ 9,758,904	\$ 6,414,410
	-	14.8%	67.6%	4.7%	5.9%	3.9%

Volumetric Capital to Include: 54%		Volumetric Capital to Include: 100%		Volumetric Capital to Include: 100%	
WAD Rate:		Re-calculated Groundwater Fee		Current Groundwater Fee for Comparison	
2023		2023		FY 2018	
Revenue Requirements		Revenue Requirements		Revenue Requirements	
Direct O&M	\$ 96,229,854	Direct O&M	\$ 96,229,854	Direct O&M	\$ 90,049,129
Capital	11,099,239	Capital	20,533,592	Capital	17,752,540
Indirect O&M	14,121,922	Indirect O&M	14,121,922	Indirect O&M	5,241,791
Overhead	21,500,376	Overhead	21,500,376	Overhead	17,571,790
	<u>\$ 142,951,392</u>		<u>\$ 152,385,745</u>		<u>\$ 130,615,249</u>
Offsets % to Include	44%	Offsets % to Include	47%	Offsets % to Include	47%
Offsets Amount	\$ (48,884,113)	Offsets Amount	\$ (52,110,314)	Offsets Amount	\$ (43,134,728)
<i>Total Rev. Requirements</i>	<i>\$ 94,067,279</i>	<i>Total Rev. Requirements</i>	<i>\$ 100,275,431</i>	<i>Total Rev. Requirements</i>	<i>\$ 87,480,520</i>
Sewer Usage (ccf)	29,279,333	Sewer Usage (ccf)	29,279,333	Sewer Usage (ccf)	30,897,804
Calculated Rate	\$ 3.21	Calculated Rate	\$ 3.42	Calculated Rate	\$ 2.83

DC Water
Revenue Requirements FY 2024

		Test Year 2:													
		Volume	Meter Charge	Wastewater	CSO	2024	Water	Meter Charge	Wastewater	CSO	% Check	Groundwater	Low Strength		
Operations															
Wastewater Treatment - Operations	0%	0%	100%	0%	\$ 83,544,135	\$ -	\$ -	\$ 83,544,135	\$ -	-	64%	\$53,638,150	64%	\$53,638,150	Direct
Wastewater Treatment - Process Engineering	0%	0%	100%	0%	7,315,921	-	-	7,315,921	-	-	64%	\$4,697,068	64%	\$4,697,068	Direct
Maintenance Services	7%	0%	93%	0%	21,360,713	1,495,250	-	19,865,463	-	-	38%	\$7,519,680	38%	\$7,519,680	Direct
Water Operations	100%	0%	0%	0%	75,020,561	75,020,561	-	-	-	-	-	-	-	-	-
Sewer Operations	0%	0%	100%	0%	16,452,536	-	-	16,452,536	-	-	100%	\$16,452,536	100%	\$16,452,536	Direct
Customer Care	18%	56%	26%	0%	22,102,983	3,978,537	12,377,670	5,746,775	-	-	38%	\$2,175,329	38%	\$2,175,329	Indirect
Pumping Operations	20%	0%	80%	0%	22,671,446	4,534,289	-	18,137,157	-	-	100%	\$18,137,157	100%	\$18,137,157	Direct
Engineering & Technical Services	7%	0%	93%	0%	24,498,843	1,714,919	-	22,783,924	-	-	38%	\$8,624,406	38%	\$8,624,406	Indirect
WasteWater Engineering	0%	0%	100%	0%	3,603,312	-	-	3,603,312	-	-	38%	\$1,363,963	38%	\$1,363,963	Indirect
D.C. Clean Rivers					4,299,489	-	-	1,994,197	2,305,292	-	-	-	-	-	-
CIP Infrastructure Management	48%	1%	51%	0%	5,554,796	2,656,964	40,419	2,857,413	-	-	38%	\$1,081,617	38%	\$1,081,617	Indirect
Permit Operations	50%	0%	50%	0%	4,647,867	2,323,934	-	2,323,934	-	-	38%	\$879,679	38%	\$879,679	Indirect
Subtotal Operations					\$ 291,072,603	\$ 91,724,454	\$ 12,418,090	\$ 184,624,767	\$ 2,305,292						
Administration															
Office of the Chief Executive Officer	45.00%	0.00%	55.00%	0.00%	\$ 2,894,914	\$ 1,302,711	\$ -	\$ 1,592,202	\$ -	-	38%	\$602,697	38%	\$602,697	Overhead
Office of the Chief Operating Officer	45.00%	0.00%	55.00%	0.00%	1,495,171	672,827	-	822,344	-	-	38%	\$311,282	38%	\$311,282	Overhead
Office of the Secretary	45.00%	0.00%	55.00%	0.00%	663,667	298,650	-	365,017	-	-	38%	\$138,170	38%	\$138,170	Overhead
Internal Audit (outsourced)	45.00%	0.00%	55.00%	0.00%	767,202	345,241	-	421,961	-	-	38%	\$159,725	38%	\$159,725	Overhead
Legal Affairs	45.00%	0.00%	55.00%	0.00%	8,673,619	3,903,128	-	4,770,490	-	-	38%	\$1,805,775	38%	\$1,805,775	Overhead
Marketing and Communications	45.00%	0.00%	55.00%	0.00%	3,408,905	1,534,007	-	1,874,898	-	-	38%	\$709,706	38%	\$709,706	Overhead
Performance	45.00%	0.00%	55.00%	0.00%	2,996,602	1,348,471	-	1,648,131	-	-	38%	\$623,868	38%	\$623,868	Overhead
Human Resources	45.00%	0.00%	55.00%	0.00%	10,376,522	4,669,435	-	5,707,087	-	-	38%	\$2,160,305	38%	\$2,160,305	Overhead
Information Technology	45.00%	0.00%	55.00%	0.00%	10,632,793	4,784,757	-	5,848,036	-	-	38%	\$2,213,659	38%	\$2,213,659	Overhead
Procurement and Compliance	45.00%	0.00%	55.00%	0.00%	7,817,442	3,517,849	-	4,299,593	-	-	38%	\$1,627,526	38%	\$1,627,526	Overhead
Finance	45.00%	0.00%	55.00%	0.00%	25,602,220	11,520,999	-	14,081,221	-	-	38%	\$5,330,169	38%	\$5,330,169	Overhead
Non-Ratepayer Revenue Fund	45.00%	0.00%	55.00%	0.00%	1,030,000	463,500	-	566,500	-	-	38%	\$214,437	38%	\$214,437	Overhead
Administrative Office	45.00%	0.00%	55.00%	0.00%	794,903	357,706	-	437,197	-	-	38%	\$165,492	38%	\$165,492	Overhead
Office of Emergency Management	45.00%	0.00%	55.00%	0.00%	1,746,359	785,862	-	960,497	-	-	38%	\$363,577	38%	\$363,577	Overhead
Facilities Management	45.00%	0.00%	55.00%	0.00%	10,243,796	4,609,708	-	5,634,088	-	-	38%	\$2,132,673	38%	\$2,132,673	Overhead
Security	45.00%	0.00%	55.00%	0.00%	8,936,140	4,021,263	-	4,914,877	-	-	38%	\$1,860,430	38%	\$1,860,430	Overhead
Occupational Safety and Health	45.00%	0.00%	55.00%	0.00%	1,700,590	765,265	-	935,324	-	-	38%	\$354,049	38%	\$354,049	Overhead
Fleet Management	45.00%	0.00%	55.00%	0.00%	7,851,915	3,533,362	-	4,318,553	-	-	38%	\$1,634,703	38%	\$1,634,703	Overhead
Subtotal Administration					\$ 107,632,760	\$ 48,434,742	\$ -	\$ 59,198,018	\$ -						
Total O&M															
					\$ 398,705,362	\$ 140,159,196	\$ 12,418,090	\$ 243,822,785	\$ 2,305,292						
Debt Service															
1998 Revenue Bonds	16.23%	8.19%	72.88%	2.70%	\$ 8,110,475	\$ 1,316,009	\$ 664,247	\$ 5,911,236	\$ 218,983	-	-	-	-	-	-
Series 2014A	0.00%	0.00%	0.00%	100.00%	16,849,000	-	-	-	16,849,000	-	-	-	-	-	-
Series 2017A	0.00%	0.00%	0.00%	100.00%	4,591,000	-	-	-	4,591,000	-	-	-	-	-	-
Series 2017B	35.44%	4.55%	60.01%	0.00%	13,258,000	4,698,583	602,836	7,956,581	-	-	-	-	-	-	
Series 2018A	0.00%	0.00%	0.00%	100.00%	5,000,000	-	-	-	5,000,000	-	-	-	-	-	-
Series 2018B	29.18%	6.13%	64.69%	0.00%	13,326,250	3,888,384	816,997	8,620,869	-	-	-	-	-	-	
WIFLA Loan	44.21%	0.00%	55.79%	0.00%	-	-	-	-	-	-	-	-	-	-	-
DC Water Bonds Planned	19.14%	0.45%	40.66%	39.75%	41,341,555	7,910,978	186,385	16,811,543	16,432,649	-	-	-	-	-	
Jennings Randolph	100.00%	0.00%	0.00%	0.00%	805,191	805,191	-	-	-	-	-	-	-	-	-
Commercial Paper	20.22%	2.13%	5.75%	71.90%	2,821,463	570,492	60,087	162,252	2,028,632	-	-	-	-	-	
Series 2010A Subordinate Bond	16.08%	0.84%	21.16%	61.92%	15,432,289	2,481,512	129,631	3,265,472	9,555,673	-	-	-	-	-	
Series 2014B Subordinate Bond	25.63%	0.66%	73.71%	0.00%	3,252,992	833,757	21,422	2,397,813	-	-	-	-	-	-	
Series 2014C Subordinate Bond	29.76%	0.54%	48.42%	21.29%	20,287,700	6,036,877	109,274	9,823,152	4,318,398	-	-	-	-	-	
Series 2015A Subordinate Bond	0.00%	0.00%	0.00%	100.00%	11,924,650	-	-	-	11,924,650	-	-	-	-	-	
Series 2015B Subordinate Bond	44.40%	2.87%	52.73%	0.00%	12,806,363	5,686,341	367,507	6,752,514	-	-	-	-	-	-	
Series 2016A Subordinate Bond	38.91%	0.74%	47.86%	12.49%	17,039,013	6,629,884	125,382	8,155,157	2,128,589	-	-	-	-	-	
Series 2019A Subordinate Bond	0.00%	0.00%	0.00%	100.00%	4,708,700	-	-	-	4,708,700	-	-	-	-	-	
Series 2019B Subordinate Bond	47.83%	0.73%	51.44%	0.00%	2,916,000	1,394,778	21,218	1,500,004	-	-	-	-	-	-	
Series 2019C Subordinate Bond	17.62%	2.39%	46.29%	33.70%	1,741,338	306,900	41,597	806,010	586,831	-	-	-	-	-	
Series 2019D Subordinate Bond	47.83%	0.73%	51.44%	0.00%	12,305,247	5,885,832	89,539	6,329,876	-	-	-	-	-	-	
Series 2022A Subordinate Bond	11.15%	0.52%	14.60%	73.73%	36,942,512	4,119,090	192,101	5,393,607	27,237,714	-	-	-	-	-	
EMCP	45.71%	0.00%	54.29%	0.00%	2,633,375	1,203,830	-	1,429,545	-	-	-	-	-	-	
Capital Equipment Financing	17.44%	2.82%	28.94%	50.80%	-	-	-	-	-	-	-	-	-	-	
Financial Policy Contingency pro forma adj.	20.00%	0.00%	80.00%	0.00%	2,500,000	500,000	-	2,000,000	-	-	-	-	-	-	
Coverage Allowance					148,855,867	32,261,064	2,056,934	51,189,378	63,348,491						
Total Debt															
					\$ 248,093,111	\$ 53,768,439	\$ 3,428,223	\$ 85,315,631	\$ 105,580,819		23%	\$19,811,927	23%	\$19,811,927	
					-	21.7%	1.4%	34.4%	42.6%		47%	\$156,789,757	47%	\$156,789,757	
Total Capital Cost															
					\$ 399,448,978	\$ 86,529,503	\$ 5,485,156	\$ 138,505,009	\$ 168,929,310						

	Volume	Meter Charge	Wastewater	CSO	2024	Water	Meter Charge	Wastewater	CSO
	Volume	Meter	Wastewater	CSO					
Wholesale Revenue	0%	0%	100%	0%	\$ (11,271,129)	\$ -	\$ -	\$ (11,271,129)	\$ -
LCSA + PI	0%	0%	100%	0%	(63,108,918)	-	-	(63,108,918)	-
WSSC	0%	0%	100%	0%	(14,762,192)	-	-	(14,762,192)	-
Fairfax County	0%	0%	100%	0%					
Other Revenue									
IMA Indirect Cost Reimb. For Capital Projects	0%	0%	100%	0%	(7,799,000)	-	-	(7,799,000)	-
Dev. Contr/Water Services Fees, Taps	100%	0%	0%	0%	(4,000,000)	(4,000,000)	-	-	-
Dev. Contr/Liability Deposits/Sewer Service Fees	0%	0%	100%	0%	(2,000,000)	-	-	(2,000,000)	-
Funding for Non-Ratepayer Revenue Fund	50%	0%	50%	0%	(1,030,000)	(515,000)	-	(515,000)	-
Commercial Water Maintenance	100%	0%	0%	0%	(32,000)	(32,000)	-	-	-
DC Fire Protection Fee	100%	0%	0%	0%	(11,535,000)	(11,535,000)	-	-	-
System Availability Fee	50%	0%	50%	0%	(7,700,000)	(3,850,000)	-	(3,850,000)	-
Washington Aqueduct's Backwash- DCW's prorata share	0%	0%	100%	0%	(3,275,400)	-	-	(3,275,400)	-
Transfer from DC PILOT/ROW Fund	33%	0%	67%	0%	-	-	-	-	-
DC Contribution of 50% PILOT Escrow to DCW	33%	0%	67%	0%	-	-	-	-	-
Sales to DC Agencies-Steam/Meter	100%	0%	0%	0%	(170,000)	(170,000)	-	-	-
Misc. Rev: Bid Deposits, Fleet Auction, Compost Sales	0%	0%	100%	0%	(6,000,000)	-	-	(6,000,000)	-
Pipe Repair Sales/Replacement	100%	0%	0%	0%	(22,000)	(22,000)	-	-	-
Stormwater	0%	0%	100%	0%	(1,000,000)	-	-	(1,000,000)	-
Northern Virginia Debt Service	24%	0%	76%	0%	(193,246)	(46,379)	-	(146,867)	-
WSRF	100%	0%	0%	0%	(39,717,000)	(39,717,000)	-	-	-
Interest Income	45%	0%	55%	0%	(4,150,788)	(1,867,855)	-	(2,282,933)	-
Total Revenue Offsets					\$ (177,766,673)	\$ (61,755,234)	\$ -	\$ (116,011,439)	\$ -
Unadjusted Revenue Requirement					\$ 620,387,667	\$ 164,933,465	\$ 17,903,246	\$ 266,316,354	\$ 171,234,602
<u>CRIAC Adjustments</u>									
Remove Capitalized O&M from CRIAC Calc.									\$ (2,305,292)
Adjusted CRIAC Total - Before Re-allocation to Sewer									\$ 168,929,310
Percent Reallocation from CRIAC to Sewer									37.00%
Reallocation from CRIAC to Sewer								62,503,845	(62,503,845)
Reallocated CRIAC Revenue Requirements									106,425,465
CRIAC Rev. Req. Plus 500,000 CAP									106,925,465
Revenue Requirement for Rate Calculations					\$ 618,582,375	\$ 164,933,465	\$ 17,903,246	\$ 328,820,199	\$ 106,925,465
<u>Water and Meter Fee Adjustments</u>									
Reallocation from Water to Meter						(5,555,188)	\$ 5,555,188		
Adjusted Water and Meter Revenue Requirements						\$ 159,378,277	\$ 23,458,434		
Adjusted Revenue Requirements + Delinquency					\$ 637,139,846	\$ 164,159,626	\$ 24,162,187	\$ 338,684,805	\$ 110,133,229

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DC Water
Allocation of Water Costs

	Test Year 2: Amount Allocated to Water	Source of Supply & Treatment	Distribution	Storage	Pumping	Customer Service/Meter	Admin/General
Operations							
Maintenance Services	\$ 1,495,250	\$ -	\$ 1,162,779	\$ 146,771	\$ 185,700	\$ -	\$ -
Water Operations	75,020,561	-	58,339,627	7,363,894	9,317,040	-	-
Sewer Operations	-	-	-	-	-	-	-
Customer Care	3,978,537	-	-	-	-	1,001,794	2,976,743
Pumping Operations	4,534,289	3,809,235	563,837	71,170	90,047	-	-
Engineering & Technical Services	1,714,919	-	1,333,604	168,334	212,981	-	-
WasteWater Engineering	-	-	-	-	-	-	-
D.C. Clean Rivers	-	-	-	-	-	-	-
CIP Infrastructure Management	2,656,964	-	2,066,184	260,803	329,977	-	-
Permit Operations	2,323,934	2,323,934	-	-	-	-	-
	\$ 91,724,454	\$ 6,133,169	\$ 63,466,032	\$ 8,010,972	\$ 10,135,745	\$ 1,001,794	\$ 2,976,743
Administration							
Office of the Chief Executive Officer	\$ 1,302,711	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,302,711
Office of the Chief Operating Officer	672,827	-	-	-	-	-	672,827
Office of the Secretary	298,650	-	-	-	-	-	298,650
Internal Audit (outsourced)	345,241	-	-	-	-	-	345,241
Legal Affairs	3,903,128	-	-	-	-	-	3,903,128
Marketing and Communications	1,534,007	-	-	-	-	-	1,534,007
Performance	1,348,471	-	-	-	-	-	1,348,471
Human Resources	4,669,435	-	-	-	-	-	4,669,435
Information Technology	4,784,757	-	-	-	-	-	4,784,757
Procurement and Compliance	3,517,849	-	-	-	-	-	3,517,849
Finance	11,520,999	-	-	-	-	-	11,520,999
Non-Ratepayer Revenue Fund	463,500	-	-	-	-	-	463,500
Administrative Office	357,706	-	-	-	-	-	357,706
Office of Emergency Management	785,862	-	-	-	-	-	785,862
Facilities Management	4,609,708	-	-	-	-	-	4,609,708
Security	4,021,263	-	-	-	-	-	4,021,263
Occupational Safety and Health	765,265	-	-	-	-	-	765,265
Fleet Management	3,533,362	-	-	-	-	-	3,533,362
	\$ 48,434,742	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 48,434,742
Total Water O&M	\$ 140,159,196	\$ 6,133,169	\$ 63,466,032	\$ 8,010,972	\$ 10,135,745	\$ 1,001,794	\$ 51,411,485
	-	4.4%	45.3%	5.7%	7.2%	0.7%	36.7%
Debt Service (1)							
1998 Revenue Bonds	\$ 1,316,009	\$ 283,720	\$ 767,094	\$ -	\$ -	\$ 265,196	\$ -
Series 2014A	-	-	-	-	-	-	-
Series 2017A	-	-	-	-	-	-	-
Series 2017B	4,698,583	1,478,973	2,842,583	-	-	377,027	-
Series 2018A	-	-	-	-	-	-	-
Series 2018B	3,888,384	1,269,501	2,477,989	-	-	140,894	-
WiFi Loan	-	-	-	-	-	-	-
DC Water Bonds Planned	7,910,978	2,088,344	5,646,263	-	-	176,372	-
Jennings Randolph	805,191	805,191	-	-	-	-	-
Commercial Paper	570,492	152,039	411,068	-	-	7,385	-
Series 2010A Subordinate Bond	2,481,512	659,820	1,783,958	-	-	37,734	-
Series 2014B Subordinate Bond	833,757	164,250	650,331	-	-	19,176	-
Series 2014C Subordinate Bond	6,036,877	1,189,265	4,708,764	-	-	138,848	-
Series 2015A Subordinate Bond	-	-	-	-	-	-	-
Series 2015B Subordinate Bond	5,686,341	1,789,890	3,440,164	-	-	456,288	-
Series 2016A Subordinate Bond	6,629,884	2,164,561	4,225,091	-	-	240,231	-
Series 2019A Subordinate Bond	-	-	-	-	-	-	-
Series 2019B Subordinate Bond	1,394,778	309,707	929,121	-	-	155,950	-
Series 2019C Subordinate Bond	306,900	68,146	204,439	-	-	34,315	-
Series 2019D Subordinate Bond	5,885,832	1,306,934	3,920,802	-	-	658,096	-
Series 2022A Subordinate Bond	4,119,090	811,461	3,212,890	-	-	94,739	-
EMCP	1,203,830	393,033	767,177	-	-	43,620	-
Capital Equipment Financing	-	-	-	-	-	-	-
Financial Policy Contingency pro forma adj.	500,000	-	-	-	-	-	500,000
	\$ 54,268,439	\$ 14,934,835	\$ 35,987,733	\$ -	\$ -	\$ 2,845,871	\$ 500,000
	-	27.5%	66.3%	0.0%	0.0%	5.2%	0.9%
Revenue Offsets							
Wholesale Revenue							
LCSA + PI	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WSSC	-	-	-	-	-	-	-
Fairfax County	-	-	-	-	-	-	-
Other Revenue							
IMA Indirect Cost Reimb. For Capital Projects	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Dev. Contr./Water Services Fees, Taps	(4,000,000)	-	(4,000,000)	-	-	-	-
Dev. Contr./Liability Deposits/Sewer Service Fees	-	-	-	-	-	-	-
Funding for Non-Ratepayer Revenue Fund	(515,000)	-	-	-	-	-	(515,000)
Commercial Water Maintenance	(32,000)	-	(32,000)	-	-	-	-
DC Fire Protection Fee	(11,535,000)	(5,767,500)	(5,767,500)	-	-	-	-
System Availability Fee	(3,850,000)	-	-	-	-	-	(3,850,000)
Washington Aqueduct's Backwash- DCW's prorata share	-	-	-	-	-	-	-
Transfer from DC PILOT/ROW Fund	-	-	-	-	-	-	-
DC Contribution of 50% PILOT Escrow to DCW	-	-	-	-	-	-	-
Sales to DC Agencies-Steam/Meter	(170,000)	-	(170,000)	-	-	-	-
Misc. Rev: Bid Deposits, Fleet Auction, Compost Sales	-	-	-	-	-	-	-
Pipe Repair Sales/Replacement	(22,000)	-	-	-	-	-	(22,000)
Stormwater	-	-	-	-	-	-	-
Northern Virginia Debt Service	(46,379)	-	-	-	-	-	(46,379)
WSRF	(39,717,000)	-	-	-	-	-	(39,717,000)
Interest Income	(1,867,855)	(616,392)	(616,392)	-	-	-	(635,071)
	\$ (61,755,234)	\$ (6,383,892)	\$ (10,585,892)	\$ -	\$ -	\$ -	\$ (44,785,450)
Total Water Revenue Offsets	\$ (61,755,234)	\$ (6,383,892)	\$ (10,585,892)	\$ -	\$ -	\$ -	\$ (44,785,450)
Unadjusted Net Water Revenue Requirements	\$ 132,672,402	\$ 14,684,112	\$ 88,867,873	\$ 8,010,972	\$ 10,135,745	\$ 3,847,665	\$ 7,126,035
	-	11.1%	67.0%	6.0%	7.6%	2.9%	5.4%
Adjustment for DS Coverage	\$ 32,261,064	\$ 8,960,901	\$ 21,592,640	\$ -	\$ -	\$ 1,707,523	\$ -
	-	-	-	-	-	-	-
Adjusted Net Water Revenue Requirements	\$ 164,933,465	\$ 23,645,013	\$ 110,460,512	\$ 8,010,972	\$ 10,135,745	\$ 5,555,188	\$ 7,126,035
	-	14.3%	67.0%	4.9%	6.1%	3.4%	4.3%

DC Water
Allocation to Functional Water Categories

Functional Categories	Test Year	Allocation Percentages			
	2022	Base	Extra Capacity Max-Month	Customer Service/Meter	Admin/General
Source of Supply & Treatment	\$ 65,189,064	78.6%	21.4%	0.0%	0.0%
Distribution	68,916,461	85.0%	15.0%	0.0%	0.0%
Storage	8,010,972	80.0%	20.0%	0.0%	0.0%
Pumping	10,135,745	50.0%	50.0%	0.0%	0.0%
Customer Service/Meter	5,555,188	0.0%	0.0%	100.0%	0.0%
Admin/General	7,126,035	0.0%	0.0%	0.0%	100.0%

Total \$ **164,933,465**

Allocation of Adjusted Test Year Revenue Requirements			
Base	Extra Capacity Max-Month	Customer Service/Meter	Admin/General
\$ 51,226,073	\$ 13,962,991	\$ -	\$ -
58,578,992	10,337,469	-	-
6,408,778	1,602,194	-	-
5,067,872	5,067,872	-	-
-	-	5,555,188	-
-	-	-	7,126,035
\$ 121,281,715	\$ 30,970,527	\$ 5,555,188	\$ 7,126,035

	Base	Average Monthly Usage (CCF)	Peaking Factor	Max-Month	Allocation for Volumetric Revenue Req.
Residential Customers					
0-4 ccf	3,330,303	277,525	1.00	277,525	-
>4 ccf	2,648,697	220,725	1.34	295,771	75,046
Multi-Family/DC Housing	9,290,000	774,167	1.16	898,033	123,867
Non-Residential (Commercial)	9,924,000	827,000	1.39	1,149,530	322,530
Non-Residential (Federal)	4,257,000	354,750	1.39	493,103	138,353
Non-Residential (Municipal)	776,000	64,667	1.39	89,887	25,220
	30,226,000	2,518,833		3,203,849	685,016

	Base	Max-Month	Base	Max-Month	Allocation for Volumetric Revenue Req.
Residential Customers					
0-4 ccf	11.0%	0.0%	14,147,976	-	14,572,415
>4 ccf	8.8%	11.0%	11,252,340	3,392,955	15,084,654
Multi-Family/DC Housing	30.7%	18.1%	39,466,287	5,600,188	46,418,469
Non-Residential (Commercial)	32.8%	47.1%	42,159,681	14,582,039	58,443,972
Non-Residential (Federal)	14.1%	20.2%	18,084,821	6,255,113	25,070,132
Non-Residential (Municipal)	2.6%	3.7%	3,296,646	1,140,232	4,569,984
	100.0%	100.0%	\$ 128,407,750	\$ 30,970,527	\$ 164,159,626

Residential Customers		
0-4 ccf	\$	4.38
>4 ccf	\$	5.70
Multi-Family/DC Housing	\$	5.00
Non-Residential (Commercial)	\$	5.89
Non-Residential (Federal)	\$	5.89
Non-Residential (Municipal)	\$	5.89

Volumetric Capital to Include: 54%		Volumetric Capital to Include: 100%		Volumetric Capital to Include: 100%	
WAD Rate:		Re-calculated Groundwater Fee		Current Groundwater Fee for Comparison	
2024		2024		FY 2018	
Revenue Requirements		Revenue Requirements		Revenue Requirements	
Direct O&M	\$ 100,444,591	Direct O&M	\$ 100,444,591	Direct O&M	\$ 90,049,129
Capital	10,709,150	Capital	19,811,927	Capital	17,752,540
Indirect O&M	14,124,994	Indirect O&M	14,124,994	Indirect O&M	5,241,791
Overhead	22,408,244	Overhead	22,408,244	Overhead	17,571,790
	\$ 147,686,980		\$ 156,789,757		\$ 130,615,249
Offsets % to Include	45%	Offsets % to Include	48%	Offsets % to Include	47%
Offsets Amount	\$ (52,055,240)	Offsets Amount	\$ (55,263,696)	Offsets Amount	\$ (43,134,728)
<i>Total Rev. Requirements</i>	\$ 95,631,740	<i>Total Rev. Requirements</i>	\$ 101,526,061	<i>Total Rev. Requirements</i>	\$ 87,480,520
Sewer Usage (ccf)	28,971,416	Sewer Usage (ccf)	28,971,416	Sewer Usage (ccf)	30,897,804
Calculated Rate	\$ 3.30	Calculated Rate	\$ 3.50	Calculated Rate	\$ 2.83